

ORDER NO.ODSD010847C3

Service Manual

Portable DVD AUDIO/VIDEO PLAYER

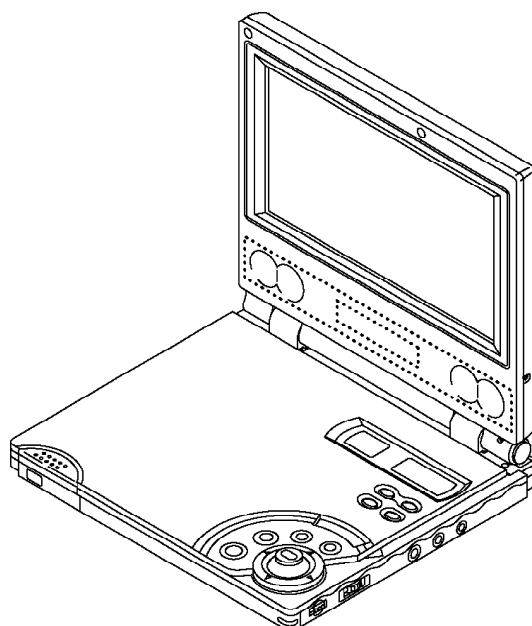
DVD-LV60

Colour

(S).....Silver Type

Areas

GK.....China.



SPECIFICATIONS

Specifications

Power supply:	DC 9V (DC IN terminal) / DC 7.2V (Exclusive battery terminal)
Power consumption:	14W (8W: Unit only)
AC adaptor	
Power source:	AC 100-240V, 50/60Hz
Power consumption:	30W
DC output:	9V, 2A
Dimensions:	159(W) x 140(D) x 27(H) mm (when the LCD screen is closed, excluding protrusions)
Mass:	510g
Operating temperature range:	5-35°C
Operating humidity range:	5-90% RH (no condensation)
Region number:	Region No.6
Signal system:	PAL625/50,PAL525/60, NTSC (Selectable)
Discs played:	
(1) DVD disc	
(2) Compact disc (CD-DA, Video CD)	
(3) CD-R/CD-RW(CD-DA, Video CD formatted discs)	
LCD screen:	5.8" Ω -Si, TFT wide-screen LCD
S video output:	
Y output level:	1Vp-p (75 Ω)
C output level:	0.286Vp-p (75 Ω) (NTSC) 0.3Vp-p (75 Ω) (PAL)
Output terminal:	Also used for video output/input
Video output/input:	
Output/input level:	1Vp-p (75 Ω)
Output/input terminal:	Mini-jack (1system, Output/input selectable)
Audio output/input:	
Output/input level:	1.5Vrms (1kHz, 0dB)
Output/input terminal:	2ch (MIX) Output (L/R): Stereo mini-jack / (1system, Output /input selectable)
Audio signal output characteristics:	
(1) Frequency response:	
● DVD (linear audio):	4Hz-22kHz (48kHz sampling) 4Hz-44kHz (96kHz sampling)
● CD audio:	4Hz-20kHz
(2) S/N ratio:	
● CD audio:	115dB
(3) Dynamic range:	
● CD audio:	97dB
Digital audio output:	
Optical digital output:	Mini optical terminal (Also used for audio output/input)
Pickup:	

Wave length: 660nm/ 780nm
Laser power: CLASS 2/ CLASS 1

Note

Specifications are subject to change without notice.
Mass and dimensions are approximate.

Power consumption in standby mode: 1.5W (when using the included AC adaptor)

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

1. SAFETY PRECAUTIONS

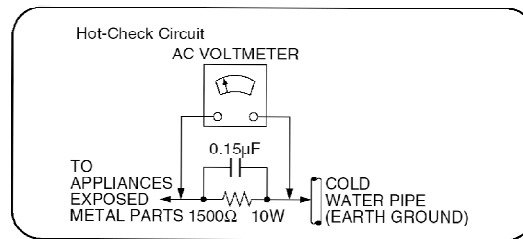
1.1. GENERAL GUIDELINES

- 1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.**
- 2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.**
- 3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.**

1.1.1. LEAKAGE CURRENT COLD CHECK

- 1. Unplug the AC cord and connect a jumper between the two prongs on the plug.**
- 2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1M Ω and 5.2M Ω . / When the exposed metal does not have a return path to the chassis, the reading must be ∞ .**

Figure 1



1.1.2. LEAKAGE CURRENT HOT CHECK (See [Figure 1](#) .)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5k Ω , 10 watts resistor, in parallel with a 0.15 μ F capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in [Figure 1](#) .
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

2. PREVENTION OF ELECTRO STATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your

body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

Caution

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by Δ in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

3. PRECAUTION OF LASER DIODE

CAUTION:

This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pickup lens.

Wave length: 660 nm/780 nm

Maximum output radiation power from pickup: 100 μ W/VDE

Laser radiation from the pickup lens is safety level, but be sure the followings:

1. Do not disassemble the optical pickup unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pickup lens for a long time.

ACHTUNG:

Dieses Produkt enthält eine Lasereinheit.

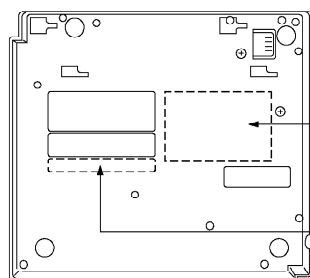
Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Lasereinheit abgestrahlt.

Wellenlänge: 660 nm/780 nm

Maximale Strahlungsleistung der Lasereinheit: 100 μ W/VDE

Die Strahlungen der Lasereinheit ungefährlich, wenn folgende Punkte beachtet werden:

1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Lasereinheit gefährlich ist.
2. Den werkseitig justierten Einstellregler der Lasereinheit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlinse blicken.
4. Nicht über längere Zeit in die Fokussierlinse blicken.



Product complies with DHHS rules 21 CFR Subchapter J in effect at date of manufacture.
Matsushita Electric Industrial Co., Ltd.
Kadoma, Osaka, Japan

CAUTION - VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. DO NOT STARE INTO BEAM.
ATTENTION - RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE. NE PAS REGARDER DANS LE FAISCEAU.

CAUTION!

THIS PRODUCT UTILIZES A LASER.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

4. HANDLING PRECAUTIONS FOR TRAVERSE DECK

The laser diode in the optical pickup may break down due to potential difference caused by static electricity of clothes or human body.

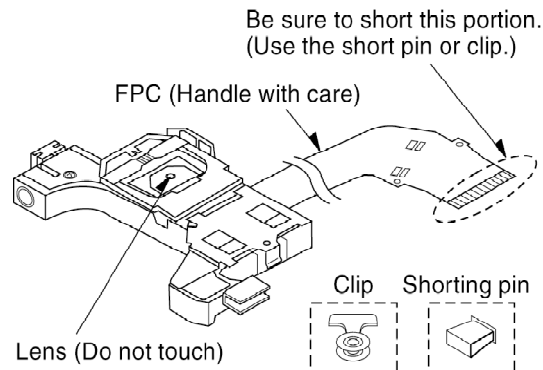
So be careful of electrostatic break down during repair of the optical pickup.

4.1. Handling of optical pickup

1. Do not subject the optical pickup to static electricity as it is extremely sensitive to electrical shock.
2. To prevent the breakdown of the laser diode, an antistatic shorting pin is inserted into the flexible board (FPC Board). / When removing or connecting the short pin, finish the job in as short times as possible.
3. Be careful not to apply excessive stress to the flexible board (FPC

Board).

4. Do not turn the variable resistor (Laser power adjustment). / It has already been adjusted.

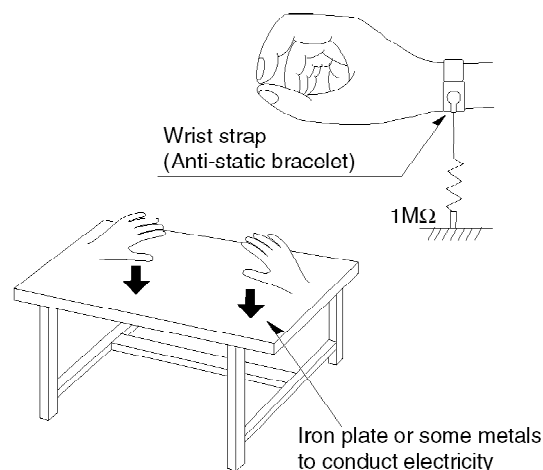


4.2. Grounding for electrostatic breakdown prevention

1. Human body grounding / Use the antistatic wrist strap to discharge the static electricity from your body.
2. Work table grounding / Put a conductive material (sheet) or steel sheet on the area where the optical pickup is placed and ground the sheet.

Caution

The static electricity of your clothes will not be grounded through the wrist strap. So take care not to let your clothes touch the optical pickup.

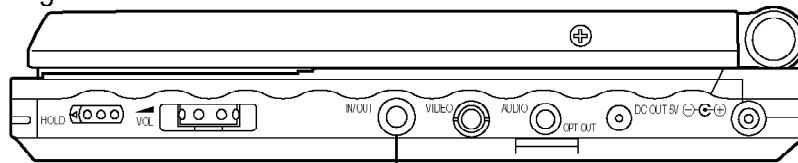


5. Handling Precautions

Confirm the status of the following buttons and switches before using this unit.

5.1. The input/output selector button

Right side of unit



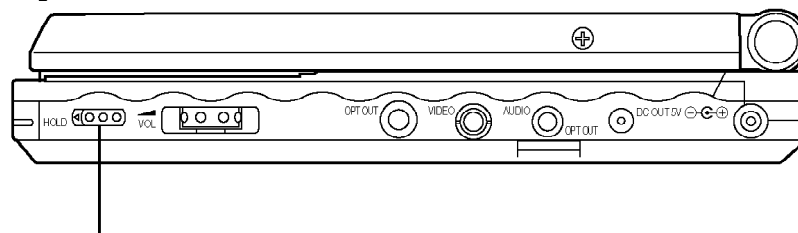
Input/output selector button

When connecting the television tuner or a video camera, etc., press the IN/OUT button to select external input mode. (The display window will light up, reading "LINE-IN.")

Shutting off the power will cancel external input mode. When continuing to watch a television broadcast or a video image, be sure to press IN/OUT once more to make "LINE-IN" light up in the display window. Auto Power Off does not work in external input mode. When not continuing playback, be sure to shut off the power.

5.2. The ON/OFF, HOLD switch

Right side of unit



The ON/OFF, HOLD switch

Sliding this switch into the HOLD position will put the unit into hold mode, and no operation using the buttons will be possible, in order to avoid inadvertent operation. If any buttons are pressed while the unit is in this mode, "Hold" will appear in the display window and for the [⏻] lamp to blink.

To cancel this mode, slide the ON/OFF, HOLD switch in the direction of ON/OFF.

6. Self-diagnosis function and service mode

6.1. Service Precautions

6.1.1. Recovery after the dvd player is repaired

When an FROM or an EEPROM in and on the module P.C.B. has replaced, carry out the recovery disc processing to optimize the drive.
Playback the disk above to process the recovery automatically,

Recovery disc (Product number: RFKZD5TR001)

Note:

This unit requires no initialization process carried out after the traditional DVD players were repaired.
When the recovery measures are taken, the customer setting will return to the factory setting as same as the procedure described in item of "Initialization" in 6.6. is carried out. Write down the contents of the setting before recovery processing, and reset the player

6.1.2. Firmware version-up of the DVD player

The firmware of the DVD player may be renewed to improve the quality including operationability and playerability to the substandard discs.processing to optimize the drive.
The version-up disc has also a recovery function so that you don't need use the recovery disc again.

Note:

If the AC power supply is shut out during version-up due to a power failure, the version-up is improperly carried out.
In such a case, replace the FROM and carry out the version-up again.
The product number of the version-up disc will be noticed when it is supplied.

6.2. Handling After Completing Repairs

Use the following procedure after completing repairs.

6.2.1. Precautions

Do not disconnect the power plug from the outlet with the tray still open, then close the tray manually.

6.3. Lens cleaning

Use the lens cleaner sold separately when cleaning the lens.

Part Number: RP-CL510 (Available from the Audio Group)

6.4. UHF displays

Use the internal service mode for evaluation of malfunctions.

Display Method	Display	Diagnosis
Items displayed when in use	CHECK THE DISC	Focus error
	H01	Inner cover trouble
	H02	Spindle servo error
	H03	Traverse error
	H04	Tracking servo error
	H05	Seek error
Press the "0" button on the remote control while holding down the PAUSE and PLAY buttons on the player. The last error code generated is saved in the EEPROM	F0**	Disc format error
	F1**	Disc code error
	F2**	Decoder LSI error
	F5**	DSC
	F6**	ECC error
	F7**	Microcomputer error
	F8**	Microcomputer error

6.5. Self-diagnosis Function and Service Modes

Improving the self-diagnosis function

The self-diagnosis function in our DVD player currently in use is improved as follows:

Our DVD player currently in use

UHF error display
The latest error storage
function
n=1

Jitter/read error display

Laser drive current display
For DVD

Our new DVD

UHF error display
The latest error storage
n=20

Jitter/read error display
Focus drive value display

Laser drive current display
For DVD/CD

ADSC internal RAM data
display

Servo process display

Total operation time display
SP motor
Laser (DVD/CD)

The storage capacity is increased.

The focus drive current value can be displayed.

The servo learning value stored in the RAM data inside the ADSC (servo controller) IC is displayed.

Mainly in the initial starting operation period of the player, a number is allotted to the servo process of each step, and the process of the starting operation can be displayed.

The operation times of SP motor and the laser (both for the DVD and CD) can be displayed.

6.6. Service mode table

Pressing various button combinations on the player and remote control unit can activate the service modes.

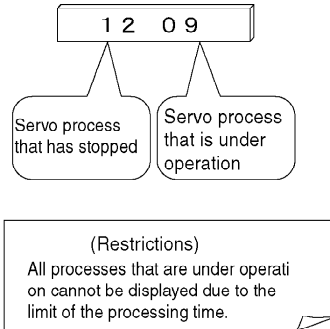
Item	Player mode and button combination	Function	Display	Cancellation method
Jitter check	In PLAY mode, press PAUSE and PLAY buttons on the player, and "5" button on the remote control unit.	Jitter check Jitter rate is measured and displayed. Measurement is repeatedly done in the cycle of one second. Read error counter starts from zero upon mode setting. When target block data failed to be read out, the counter advances by one increment. When the failure is caused by minor error, it may be corrected when retried to enable successful reading. In this case, the counter advances by one. When the error persists even after retry, the counter may jump by two or more.	xx _yyzz ↑ ↑ ↑ Focus drive value Jitter rate Read error counter Jitter rate is shown in decimal notation to one place of decimal. Focus drive value is shown in hexadecimal notation.	Press STOP or OPEN button.
Error code check	In ** mode, press PAUSE and PLAY buttons on the player, and "0" button on the remote control unit. * With pointing of cursor up and down on display, the panel controller switches serial number of history and sends out the command accordingly.	Error code check The latest error code stored in EEPROM is displayed.	Error code (play_err) is expressed in the following convention. Error code = 0 x DAXX is expressed: > nn UXX Error code = 0 x DBXX is expressed: → nn HXX Error code = 0 x DXXX is expressed: → nn FXX Error code = 0 x 0000 is expressed: → nn F-- * "nn" denotes the serial number of history.	Cancelled automatically 5 seconds later.
Initial setting of laser drive current	In STOP mode, press PAUSE and PLAY buttons on the player, and PAUSE button on the remote control unit.	Initial setting of laser drive current Initial current value for each of DVD laser and CD laser is separately saved in EEPROM.	LO _ _34_28 ↑ ↑ CD laser current measurement DVD laser current measurement Laser current measurement mode The value denotes the current in decimal notation. The above example shows the initial current is 34mA and 28mA for DVD laser and CD laser respectively when the laser is switched on.	Cancelled automatically 5 seconds later.
DVD laser drive current measurement	In STOP mode, press PAUSE and PLAY buttons on the player, and DISPLAY button on the remote control unit.	DVD laser drive current measurement DVD laser drive current is measured and the result is displayed together with the initial value stored in EEPROM. After the measurement, DVD laser emission is kept on. It is turned off when POWER key is switched off. (It is also turned off when the primary power is switched off.)	Ld _ _3432 ↑ ↑ Measured current Initial current stored in EEPROM DVD laser current measurement mode The value denotes the current in decimal notation. The above example shows the initial current is 34mA and the measured value is 32mA.	Cancelled automatically 5 seconds later.
ADSC internal RAM data check	In ** mode, press PAUSE and PLAY buttons on the player, and RETURN button on the remote control unit.	ADSC internal RAM data check ADSC internal RAM data is read out and displayed. Change the address with CLEAR key operation to show the data for 11 addresses.	OF _A6901 ↑ RAM data for specified address Address The value is shown in hexadecimal notation. The above example shows the data in ADSC address DFAh is 6901h.	Press STOP or OPEN button.
Servo process display	In STOP mode, press PAUSE and FWD-SKIP buttons on the player, and "7" button on the remote control unit.	Servo process display The servo process from STOP to ACCESS is displayed.	_____	Turn off the secondary power.
CD laser drive current measurement	In STOP mode, press PAUSE and FWD-SKIP buttons on the player, and DISPLAY button on the remote control unit.	CD laser drive current measurement CD laser drive current is measured and the result is displayed together with the initial value stored in EEPROM. After the measurement, CD laser emission is kept on. It is turned off when POWER key is switched off. (It is also turned off when the primary power is switched off.)	LC _ _2826 ↑ ↑ Measured current Initial current stored in EEPROM CD laser current measurement mode The value denotes the current in decimal notation. The above example shows the initial current is 28mA and the measured value is 26mA.	_____

Item	Player mode and button combination	Function	Display	Cancellation method
Version display	In STOP mode, press PAUSE and PLAY buttons on the player, and "7" button on the remote control unit.	Version display	rr_r_yzzz ↑ ↑ ↑ System controller release number System controller generation Panel controller release number	Cancelled automatically 5 seconds later.
Lighting of display tube	In ** mode, press PAUSE and PLAY buttons on the player, and "9" button on the remote control unit.	Lighting of display tube	_____	Press STOP or PLAY button.
Initialization	In STOP mode, press PAUSE, BWD-SKIP and PLAY buttons on the player for 3 seconds or longer.	Initialization User settings are cancelled and player is initialized to factory setting.	-- _ Init _	
Region display	In STOP mode, press PAUSE and PLAY buttons on the player, and "6" button on the remote control unit.	Region display	- x - yzzz ↑ ↑ ↑ N: NTSC / 6: PAL60 N: noPAL / P: PAL Region No.	Cancelled automatically 5 seconds later.

Item	Player mode and button combination	Function	Display	Cancellation method
Timer 1 check	In STOP mode, press PAUSE and FWD-SKIP buttons on the player, and "5" button on the remote control unit.	Timer 1 check Laser operation timer Operation time is measured separately for DVD laser and CD laser.	t1 _ _ 1234 Shown to the left is DVD laser time, and to the right CD laser time. Time is shown in 4 digits of decimal notation in a unit of 10 hours. "0000" will follow "9999".	Cancelled automatically 5 seconds later.
Timer 1 reset	While displaying Timer 1 data, press STOP and FWD-SKIP buttons on the player, and "5" button on the remote control unit.	Timer 1 reset Laser operation timer Operation time of both DVD laser and CD laser is reset all at once.	t1 _ _ 0000	Cancelled automatically 5 seconds later.
Timer 2 check	In STOP mode, press PAUSE and FWD-SKIP buttons on the player, and "6" button on the remote control unit.	Timer 2 check Spindle motor operation timer	t2 _ _ 1234 Time is shown in 4 digits of decimal notation in a unit of 10 hours. "0000" will follow "9999".	Cancelled automatically 5 seconds later.
Timer 2 reset	While displaying Timer 2 data, press STOP and FWD-SKIP buttons on the player and "6" button on the remote control unit.	Timer 2 reset Spindle motor operation timer	t2 _ _ 0000	Cancelled automatically 5 seconds later.

6.7. Servo Process Flow

Specification of the servo process display in the starting flow



Starting flow	Range of the servo process numbers	Processing items	
		Number	Contents of each process
(START)			
Initial setting	00	00	Each initial setting
TRV initial movement	01	01	TRV initial movement
Disc detection	02~08	02	Initial setting in FE system
		05	Detecting LD ON HALF
		08	Detecting CD LD ON
Disc type distinction	02~08	02	Initial setting in FE system
Focus servo	10~13	12	Focus ON
		13	FBAL adjustment
Tracking servo	14~15	15	Tracking ON
Gain learning	17	17	Gain adjustment in ADSC focus system
ID read	18~1A	19	DBAL/equalizer adjustment
		1A	ID read

6.8. Servo Process Display Mode

In starting operation of the player, a number is allotted to each servo process so that the operation of each step can be seen. The relation between the process and the displayed number are as follows:

Number allotment to the servo process

Process classification	Each processing item	Description	Process number
Initial start process	Initial start	The process starts after the tray is loaded. (The state is changed to "READY" or PREPARE".)	0~40
	Secondary learning	Servos for the DVD-DL 1st layer and the CD-DA double speed are learned in this step.	50~7F
Restart process	Restart	When a user operates in the "READY" state, each servo is turned on.	80~9F
Seek process	Seek	The optical pickup is moved to the disc destination in this process.	A0~BF
Repair process	Recover		
	(Error check)	An error is searched in the PLAY/SEEK state.	C1~C3
	(Attention)	An error is recovered following the attention error interrupt from the S-ODC.	C4~C6
	(Q code read)	If any Q code is improperly read, reset and retry.	C7~C9
Stop process	Stop	A servo is controlled in response to the user's operation to stop the disc completely.	F0~FF

6.9. ADSC Internal Ram Data Display

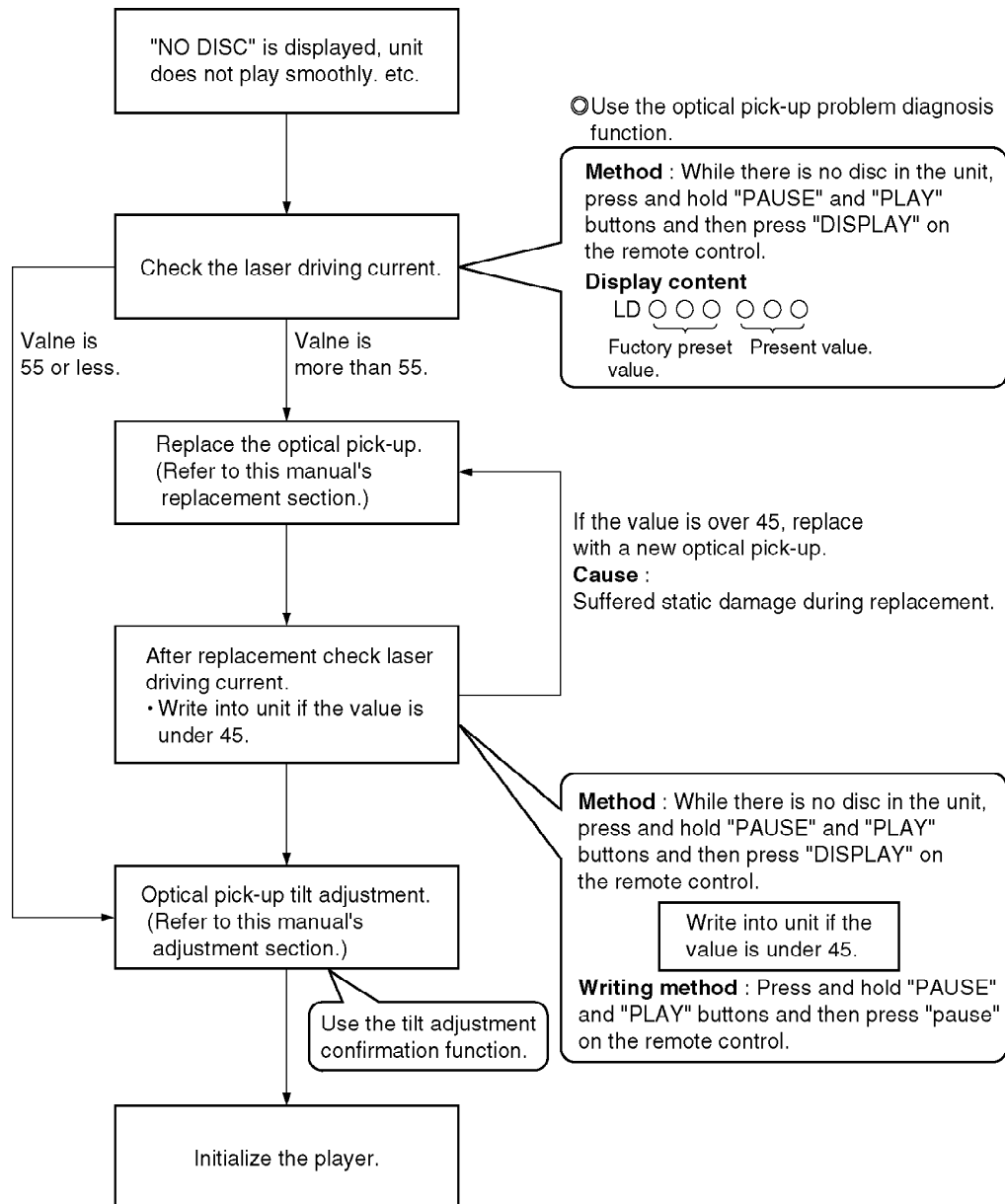
The servo learning value in the RAM data inside the servo processor ADSC is displayed.
The value is useful for the servo operation/disc quality judge including the OPU.
The concrete contents are shown below:

Address	Contents of display
4B4	Focus gain learning value for DVD-S, DVD-D(L0), CD, and VCD
4BC	Focus gain learning value for DVD-D(L1)
4B6	Focus balance learning value for DVD-S, DVD-D(L0), CD, and VCD
4BE	Focus balance learning value for DVD-D(L1)
4B5	Tracking gain value for DVD-S, DVD-D(L0), CD, and VCD
4BD	Tracking gain value for DVD-D(L1)
TB0	Tracking balance value for DVD-S, DVD-D(L0), CD, VCD
TB1	Tracking balance value for DVD-D(L1)
DBD	DSL offset learning value for DVD-S and DVD-D
DBC	DSL offset learning value for CD and VCD
FC0	Equalizer FC value for DVD-S, DVD-D(L0), CD, and VCD
BT0	Equalizer BOOST value for DVD-S, DVD-D(L0), CD, and VCD
FC1	Equalizer FC value for DVD-D(L1)
BT1	Equalizer BOOST value for DVD-D(L1)

7. Diagnosing problems with the optical pick-up and repair procedure

7.1. Self-diagnosis

As a new feature, this unit has an “optical pick-up problem diagnosis function” and “a tilt adjustment confirmation function” built in. Use the following procedure to efficiently determine the problem and adjust tilt. If "NO DISC" is displayed, before exchanging the optical pick-up, carry out problem diagnosis first. If the present laser driving current is over 55, the optical pick-up may need to be exchanged.



Note:

Carry out diagnosis within 3 minutes of turning the unit on. (The player's current can increase as it warms up, so turn the unit off and allow it to cool down before diagnosis.)

7.2. Cautions to Be Used Before Replacing the Optical Pickup Unit and Spindle Motor Assembly

Before replacing the optical pickup unit and spindle motor assembly, check the total using hours for each of them. The checking method is as follows:

	Operating state & Key operation	Display
Using hours of CD laser	Press "PAUSE", FWD-SKIP" and "5" on the remote control in this order while the unit is stopped	T1_xxxx_yyyyyyy: total hours are displayed by 4-digit figures (unit: 10 hours).
Using hours of DVD laser	Press "PAUSE", FWD-SKIP" and "5" on the remote control in this order while the unit is stopped	T1_xxxx_yyyyyyy: total hours are displayed by 4-digit figures (unit: 10 hours).
Using hours of SP motor	Press "PAUSE", FWD-SKIP" and "6" on the remote control in this order while the unit is stopped	T2_xxxxxxxx: total hours are displayed by 4-digit figures (unit: 10 hours).
Resetting using hours of CD and DVD lasers (Simultaneous resetting)	Press "PAUSE", FWD-SKIP" and "6" on the remote control in this order while the unit is stopped	T1_0000_0000
Resetting using hours of the motor	Press "PAUSE", FWD-SKIP" and "6" on the remote control in this order while the unit is stopped	T2_0000

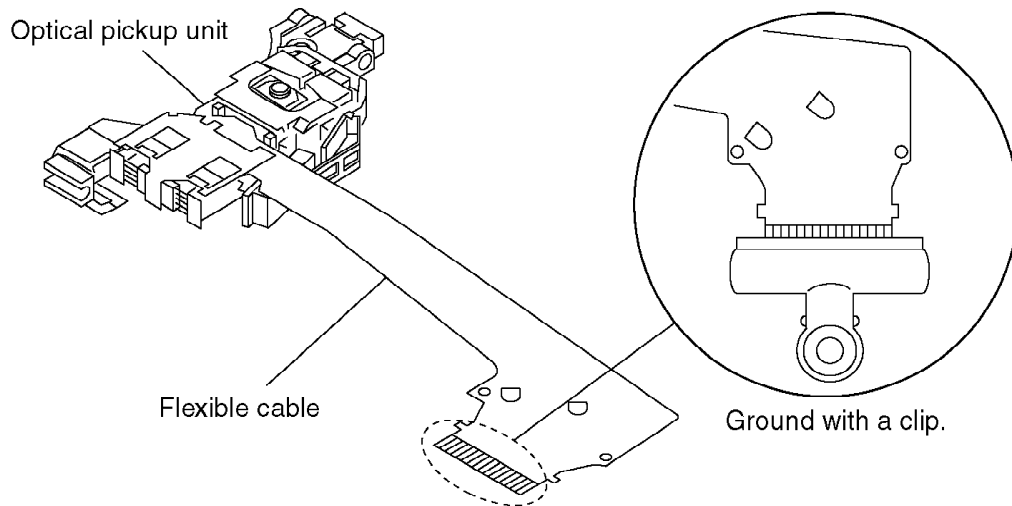
Cautions to be taken when replacing the optical pickup

The optical pickup may break down due to the static electricity of human body. Take proper protection measures against static electricity before repairing the parts around the optical pickup. (See the page describing the PREVENTION OF STATIC ELECTRICITYDISCHARGE.)

- 1. Do not touch the areas around the laser diode and actuator.**
- 2. Do not judge the laser diode with a tester. (The tester will be damaged easily.)**
- 3. It is recommended to use a destaticized soldering iron for short-circuiting or removing the laser diode. (Recommended soldering iron) HAKKO ESD Product**
- 4. Solder the land of the flexible cable in the optical pickup.**

Note:

- When using a soldering iron which is not destaticized, short-circuit the terminal face of the flexible case with a clip. After that, short-circuit the land.**
- After the repairing work is completed, remove the solder according to the correct procedure shown in this Technical Guide.**



8. General Description

8.1. Operating Instructions

9. DISASSEMBLING AND REASSEMBLING THE CASING AND CHECKING P.C.B.s

<Caution>

Pull the DC power plug out of the outlet before disassembling and reassembling the unit or replacing the parts. Not doing so may cause an electric shock or injury.

The laser won't come on while the inner cover is open.

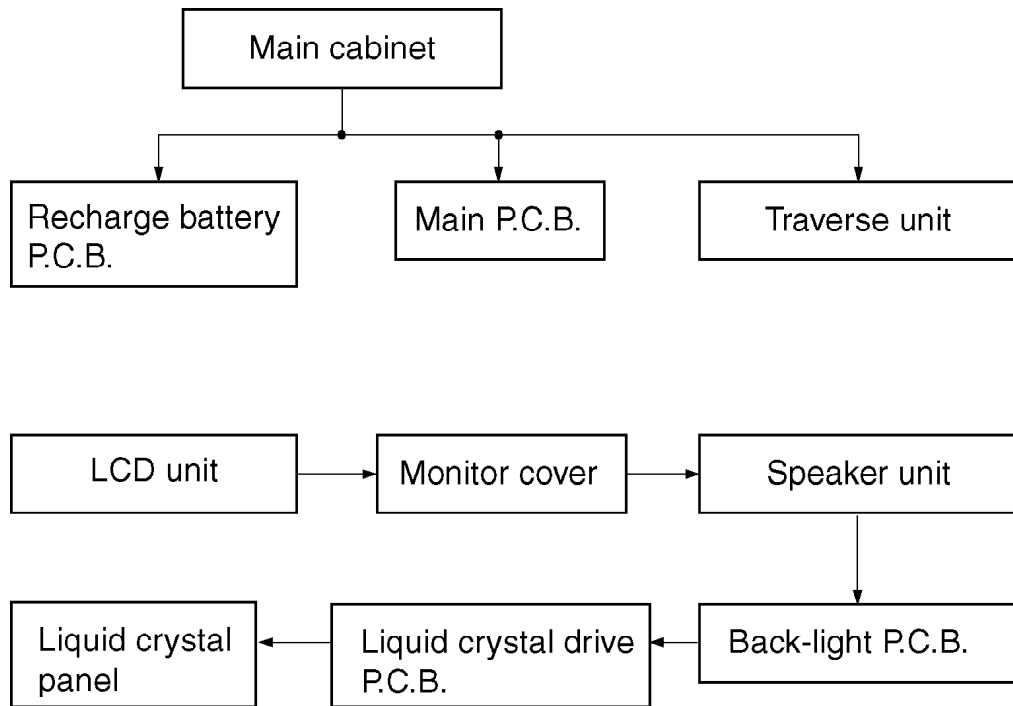
However, if the object lens of the optical pickup unit glows red with the inner cover opened, immediately turn off the power supply and check the unit.

If the laser should be lit up for playback check, never look at the light of the laser.

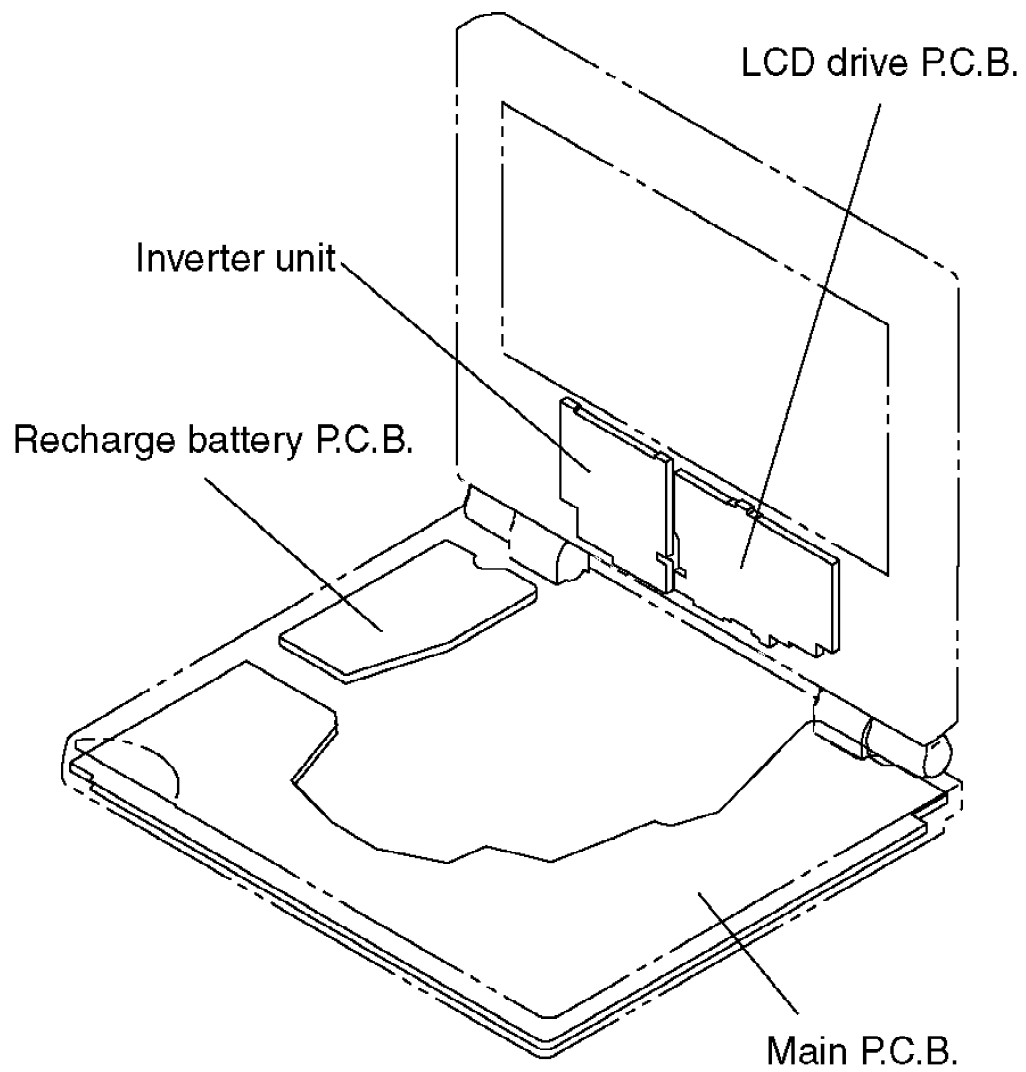
Remove the disc before disassembling the body.

Use due caution not to damage the surface of the LCD.

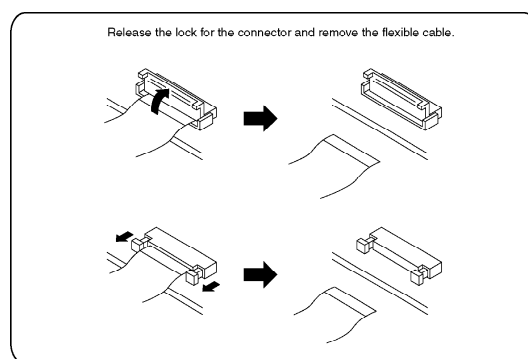
9.1. Disassembly Procedure



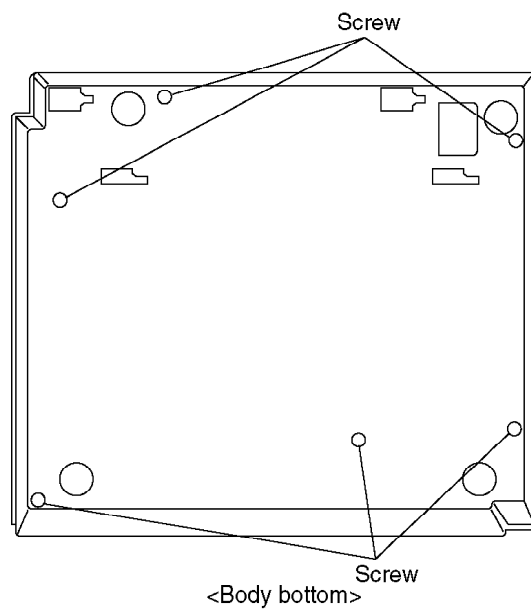
9.2. P.C.B. Positions



9.3. Main Cabinet



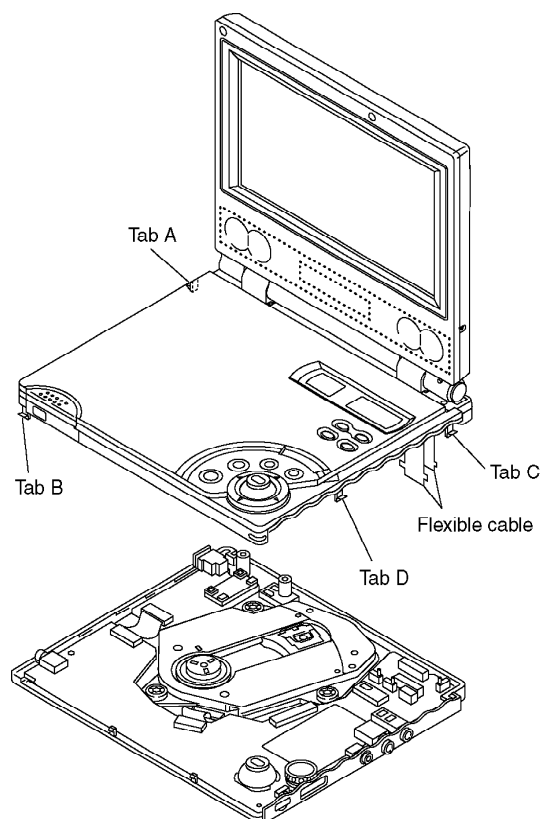
1. Unscrew the screws from the bottom of the body



2. Release tabs.

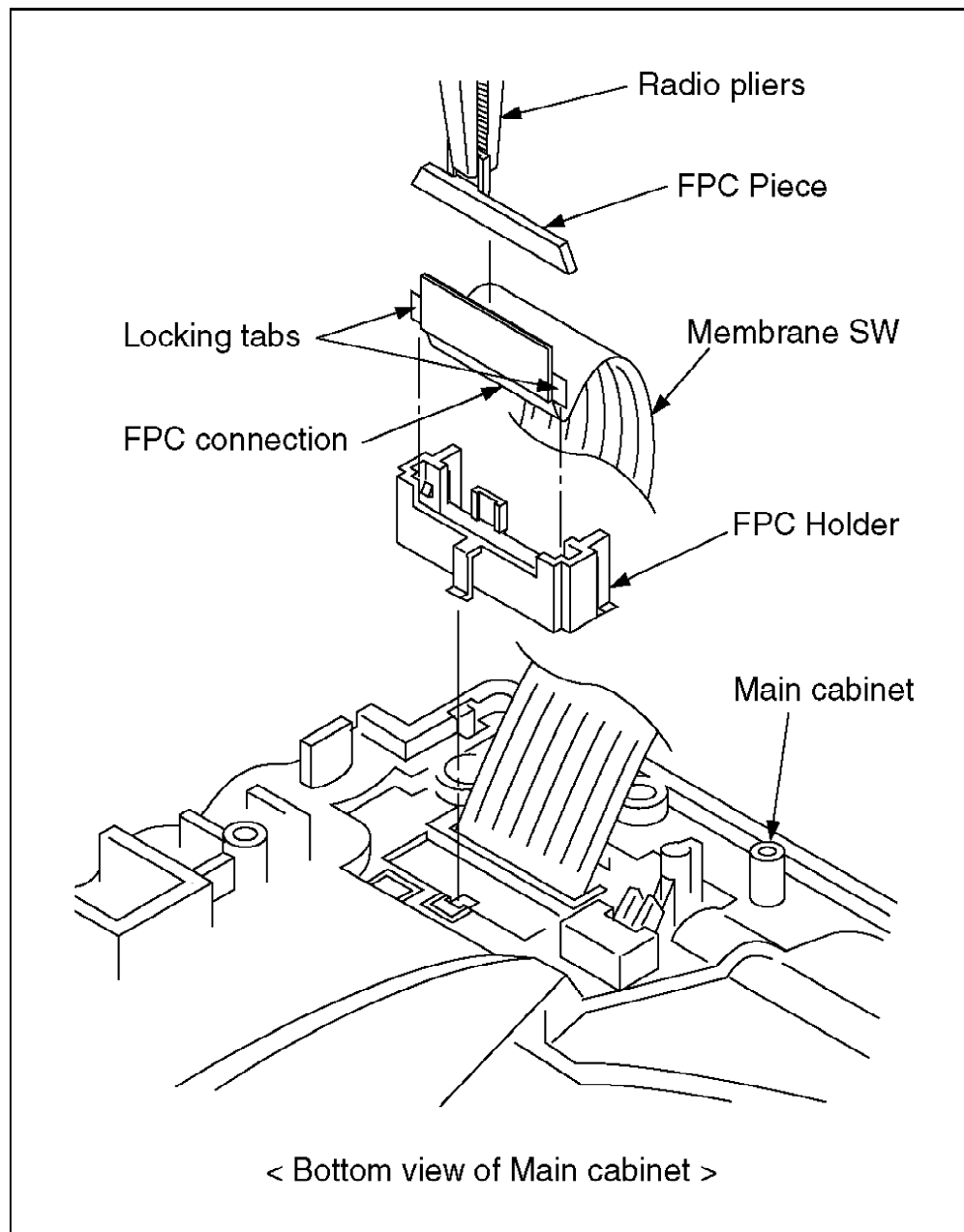
(Release the tab A. Press the tab B backward to release. Release the tabs C & D with the left side of the main cabinet raised.)

3. Remove the flexible cable.



<The way of FPC holder and Membrane SW>

- 1. It bends FPC connection part from the place of the reinforcement board to the L form.**
- 2. It installs FPC connection part in FPC holder.**
 - It hangs both edges on FPC holder locking tabs.**
 - It is careful of the bend of Membrane SW.**
- 3. It installs FPC piece in FPC holder.**
 - It pulls with the radio pliers and it confirms whether or not the locking tabs in the both edges hangs tight.**
- 4. It installs FPC holder in Main cabinet.**

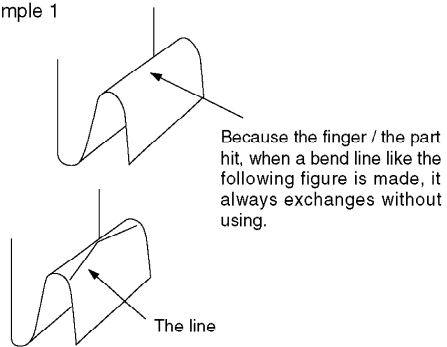


Note:

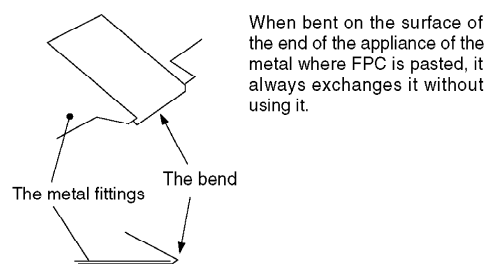
The attention item of the bend of Membrane SW

- **Don't do except for the bend which is indicated about the manufacturing standard.**
(Because a pattern is broken if bending the others in the shown bend part)
- **Don't bend as shown in the following example.**

Example 1

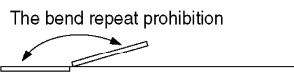


Example 2



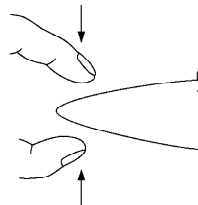
Example 3

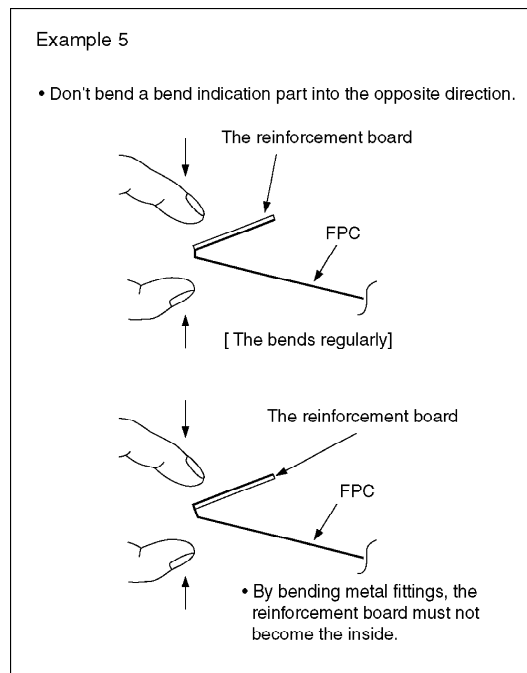
Don't repeat winding in the bend indication part.
(Of bending it about a lot of degrees don't stretch it.)



Example 4

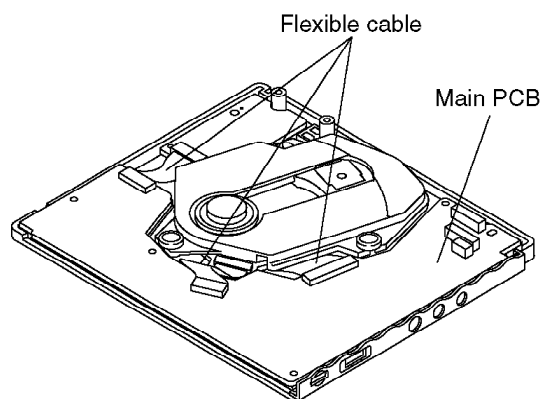
- Don't do a bend except the bend indication part.
- Like the following figure, put in with the finger and don't put a fold.





9.4. Main P.C.B.

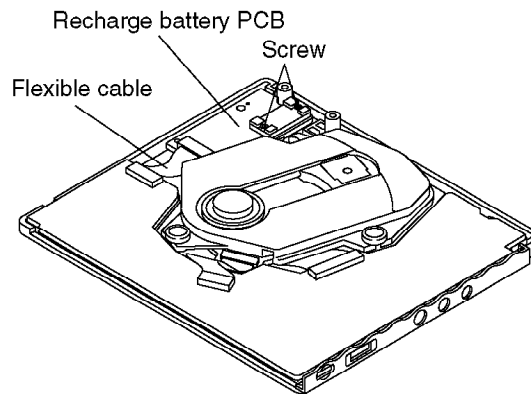
1. Remove the flexible cable.



9.5. Recharge battery P.C.B.

1. Remove the screws.

2. Remove the cable.



9.6. Traverse Unit

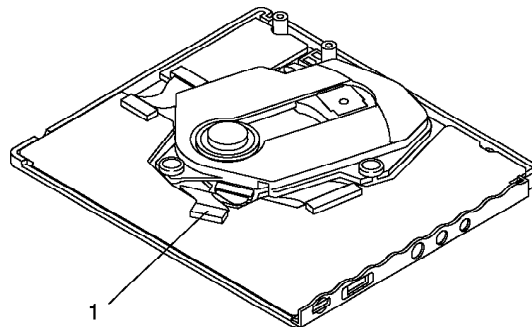
<Caution>

Electrostatic breakdown prevention is required when servicing is performed in the area around the traverse unit.
 Proceed servicing works under the working environment where grounding works is completed.

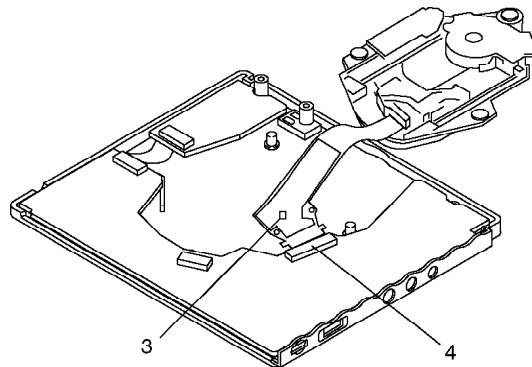
9.6.1. Removing the traverse unit

Before removing the traverse unit, remove the casing parts.

1. Release the lock for the connector and remove the flexible cable.



2. Remove the traverse unit.
3. Release the lock for the connector and remove the flexible cable from the optical pickup unit.



4. Solder the laser short land on the flexible cable in the optical pickup unit at the bottom of the traverse unit.

9.6.2. Installing the traverse unit

The traverse unit has been adjusted. Do not touch the adjusting screws.

1. Install the flexible cable on the optical pickup unit and lock the cable securely.
2. Remove the solder from the laser short land on the flexible cable.

Note:

- Remove the solder completely. Otherwise, the laser diode won't emit light.

3. Install the flexible cable and damper and secure them with the pins positioned on the body.
4. No adjustment is required when replacing the traverse unit.

9.6.3. Removing the optical pickup unit

<Caution>

Cautions to be used when replacing the optical pickup unit

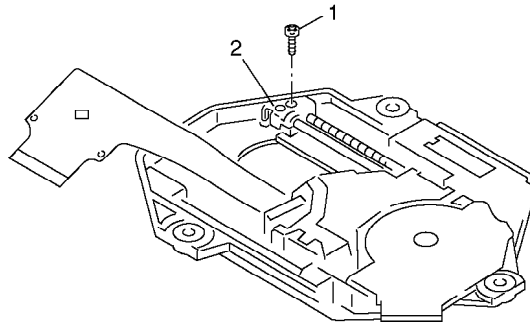
1. Electrostatic breakdown prevention is required when servicing is performed in the area around the traverse unit.
2. Use a work bench to carry out the servicing work in a clean environment without dust.
3. Disassemble only the specified parts of the optical pickup unit. If you disassemble the parts other than the specified ones, the optical pickup unit may not be adjusted.
4. Use caution not to lose small parts such as springs and screws when replacing the traverse.

The traverse is a precision optical part.

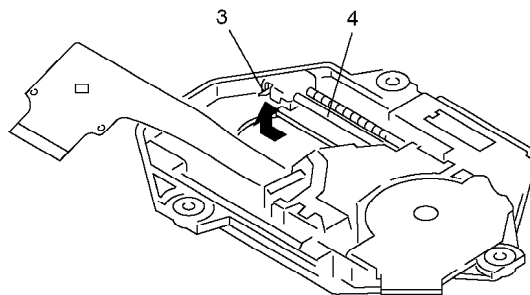
Use caution not to touch the area around the lens nor give any shock to the traverse.

Remove the traverse unit and disassemble the optical pickup unit. Before removing the traverse unit, solder the laser short land (2 positions) on the flexible cable in the optical pickup unit.

1. Remove the screw from the main bearing.
2. Remove the main bearing.



3. Remove the spring that locks the main shaft.
4. Slide the main shaft in the direction indicated by the arrow, and remove the optical pickup unit.



9.6.4. Installing the optical pickup unit

The optical pickup unit is an adjusted and finished product. Never touch the adjusting screw.

1. Reassemble the optical pickup unit carefully in the reverse order of the disassembling procedure.
2. Install the reassembled pickup unit and remove the solder from the flexible cable. After that, install the traverse unit on the body.

Cautions:

- The laser diode won't emit light unless the solder has completely been removed.
- After replacing the optical pickup unit, check the playback picture quality and adjust the optics.

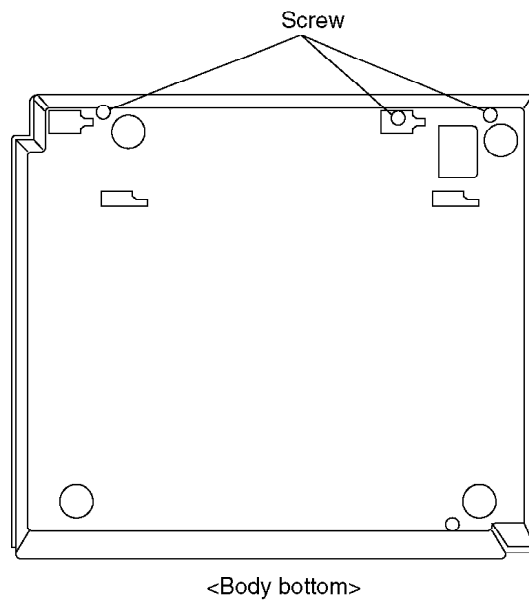
9.7. LCD Unit

<Caution>

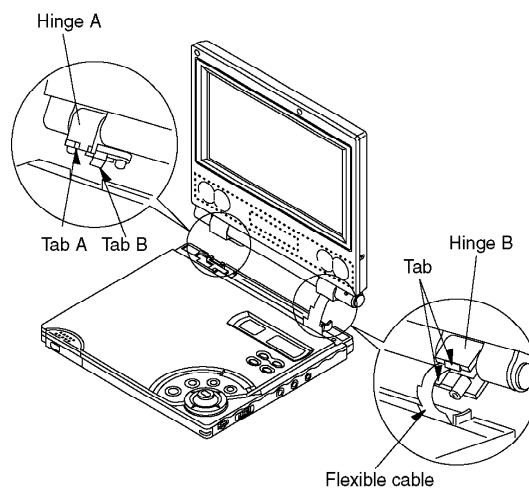
Use caution not to get an electric shock from the high voltage section during the electricity conducting test after disassembly. In addition, use caution not to damage the LCD surface.

9.7.1. Disassembly procedure

1. Remove the screws from the bottom of the body.

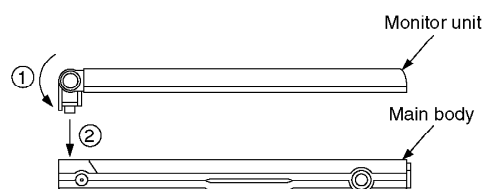


2. Disengage the tabs.
(Press the tab A of the Hinge A backward to remove.)
3. Remove the flexible cable.



9.7.2. Assembling procedure

After the hinge part is put into the close all states of the monitor unit is installed.(Afterwards,hinge B is set on the right side.)



Note

When the monitor cover is disassembled

1. Assemble the monitor cover and install the flexible cable. After that, assemble hinges A and B in this order.

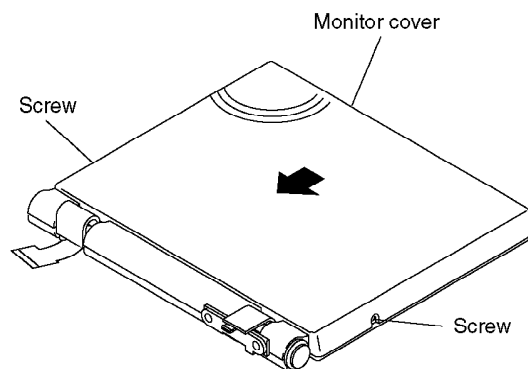
Note

When the monitor cover isn't disassembled

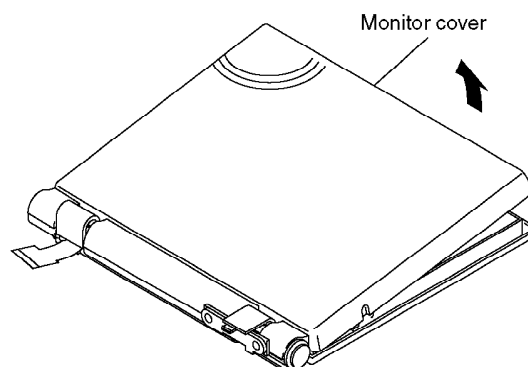
1. Install the flexible cable.
2. Install the tab B of the hinge A and assemble the hinge A with the tab B pressed.
3. Assemble the hinge B.

9.8. Monitor Cover

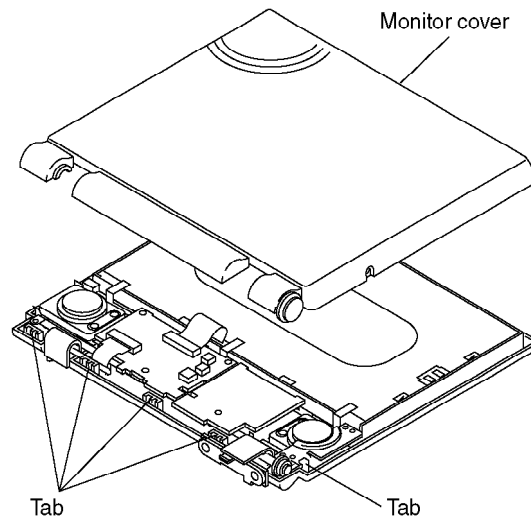
1. Remove the screws.
2. Slide the monitor cover in the direction indicated by the arrow.



3. Lift the monitor cover.

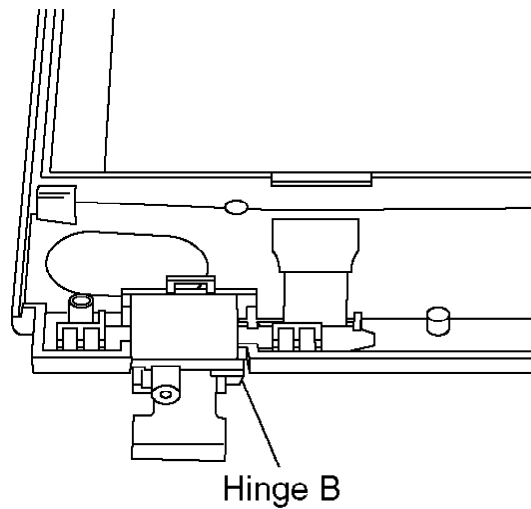


4. Disengage the tab.

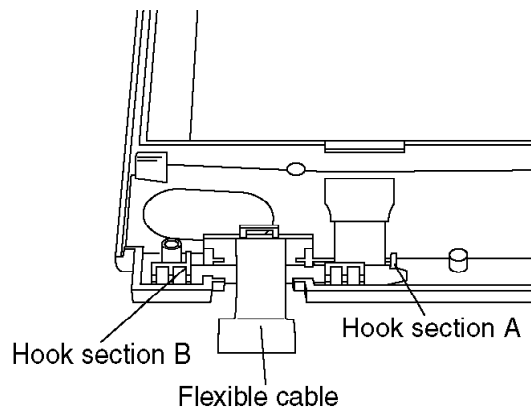


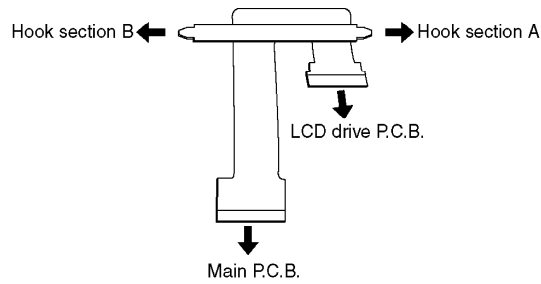
9.8.1. Disassembling and reassembling the flexible unit

1. Remove the hinge B.



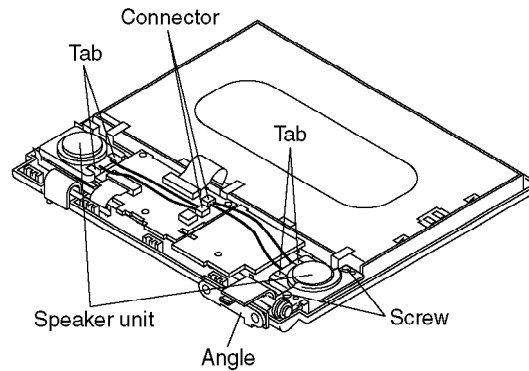
2. Disengage the hook sections A and B in this order and remove the flexible cable.





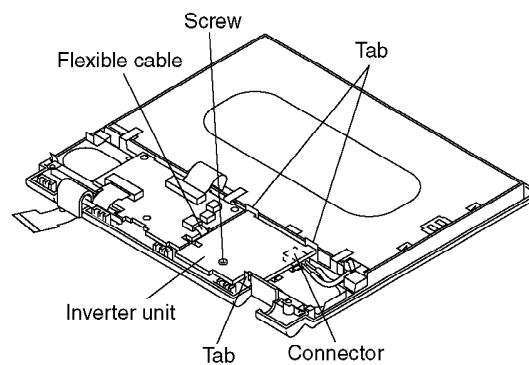
9.9. Speaker Unit

1. Remove the screws.
2. Remove the angle.
3. Remove the connectors.
4. Disengage the tabs.



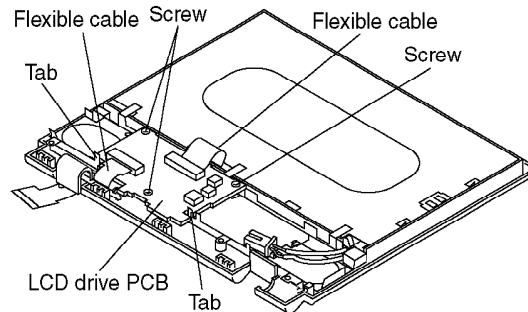
9.10. Inverter unit

1. Remove the screws.
2. Disengage the tabs.
3. Remove the connectors.
4. Remove the flexible cable.



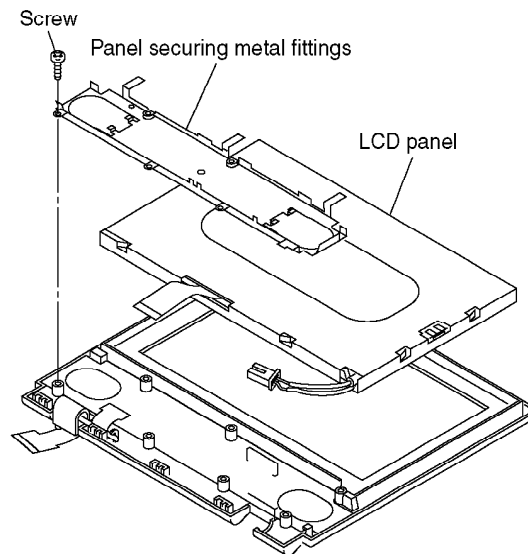
9.11. LCD Drive P.C.B.

1. Remove the screws.
2. Remove the flexible cable.
3. Disengage the tabs.



9.12. LCD panel

1. Remove the screws.
2. Remove the panel securing metal fittings.



9.13. Service Position

<Caution>

If the laser should be lit up for playback check, never look at the light of the laser.

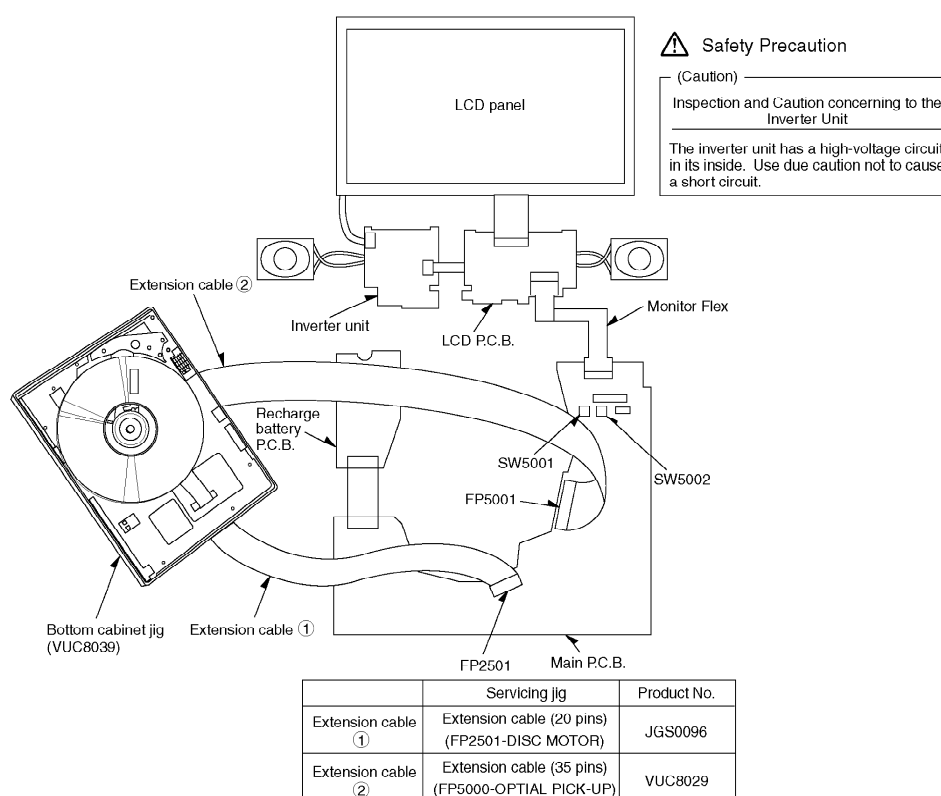
9.13.1. Checking P.C.B.s

1. Connect the main P.C.B. and traverse unit using an extension cable. (Pass the extension cable through the square hole on the bottom cabinet jig.)

Note:

To prevent the disc from getting damaged, take appropriate measures not to raise the FFC from the upper surface of the traverse unit.

2. Disassemble the liquid crystal drive P.C.B. and the inverter unit as shown in the figure below.
3. Playback cannot be carried out without the outer cover. Continue to press the SW5001 and 5002.
(It stops it with the Scotch tape etc.)



Initializing the DVD player · · After completing the repair works, initialize the DVD player.
[How to initialize the DVD player]
Press the buttons of "Pause", "Return Skip" and "Play" on the body simultaneously, the DVD player is initialized (set to factory settings).
When the DVD player is initialized, a message of "All Clear" appears on the screen.
After checking the screen message, continue to press the buttons for 2 - 3 seconds and check that the message disappears from the screen.
[Notes]
When "Initializing" is carried out, the customer settings return to the factory settings. Before initializing the DVD player, write down your settings and reset the player after completing the initializing process.

10. ADJUSTMENT PROCEDURES

<Caution>

Be sure to take static electricity countermeasures before adjusting the optical system. Adjust the optical systems according to the prescribed procedure.

10.1. Service Tools and Equipment

Application	Name	Number
Tilt adjustment	DVD test disc	DVDT-S15 or DVDT-S20
	Hex. wrench	JGS0100
	Bottom cabinet jig	VUC8039
Inspection	Extension cable (Traverse unit to main P.C.B.)	JGS0096
	Extension cable (Traverse unit to main P.C.B.)	VUC8029
Others	Screw lock	RZZ0L01
	Grease	JGS0101
	Lubricating oil	JZS0648
Confirmation	CD test disc	PVCD-K06 or any other commercially available disc
	VCD test disc	PVCD-K06 or any other commercially available disc
	Recovery disc	RFKZD5TR001

10.2. Important points in adjustment

10.2.1. Important points in optical adjustment

- Optical pickup tilt adjustment is needed after replacement of the following components.

1. Optical pickup unit
2. Disc motor
3. Traverse motor
4. Optical pickup peripheral parts (such as rail)

Notes

Adjustment is generally unnecessary after replacing other parts of the traverse unit. However, make adjustment if there is a noticeable degradation in picture quality.

Optical adjustments cannot be made inside the optical pickup.

Adjustment is generally unnecessary after replacing the traverse unit.

10.2.2. Important points in electrical adjustment

- Follow the adjustment procedures described in this Manual.

10.3. Storing and Handling Test Discs

-Surface precision is vital for DVD test discs. Be sure to store and handle them carefully.

1. Do not place discs directly onto the workbench, etc., after use.
2. Handle discs carefully in order to maintain their flatness. Place them into their case after use and store them vertically. Store discs in a place where they are not exposed to direct sunlight or air from air conditioners.
3. Accurate adjustment will not be possible if the disc is warped when placed on a surface made of glass, etc. If this happens, use a new test disc to make optical adjustments.
4. If adjustment is done using a warped disc, the adjustment will be incorrect and some discs will not be playable.

10.4. Optical Adjustment

10.4.1. Optical pickup tilt adjustment

Measurement point	Adjustment point	Mode	Disc
	Tangential adjustment screw	T01 (inner periphery) play	DVDT-S15 or DVD
	Radial tilt adjustment screw	T43 (outer periphery) play	
Measuring equipment		Adjustment value	
None (Main unit display for servicing is used.)		Adjust to the minimum jitter value.	

Before proceeding the optical pickup tilt adjustment, remove the soldered short circuit.

10.4.1.1. Before adjustment

1. Remove the adhesive on the tilt cam at the lower surface of the traverse with tweezers. (See [Fig. 1](#))
2. Place the unit so that the tab section of the tilt cam A is directed right above. (See [Fig. 1](#))
3. Connect two extension cables with the bottom cabinet jig. (See [Fig. 2](#))

Caution:

To prevent the disc from getting damaged, take appropriate measures against lift of the FFC from the upper surface of the traverse unit.

4. Connect the membrane switch with the main PCB. (See [Fig. 2](#))

Fig. 1

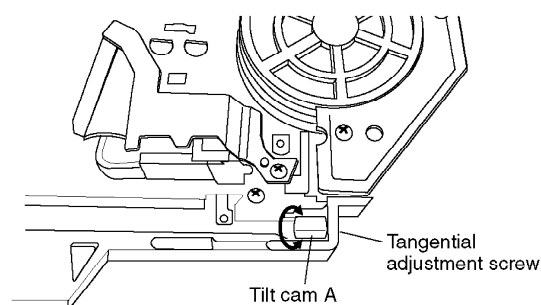
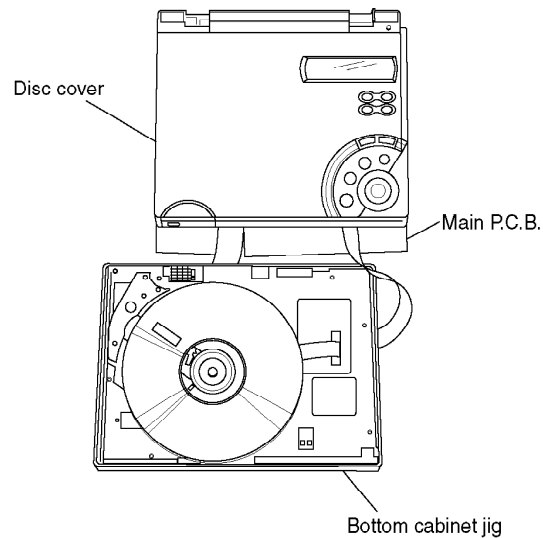


Fig. 2



10.4.1.2. Adjustment procedure

1. Play test disc T01 (inner periphery).
2. Set the unit to the tilt adjustment service mode. (Press PAUSE and PLAY buttons on the player, and “5” button on the remote control unit.)
3. Make sure that "XX-YYYZZ" appears on the display of the disc cover.

For your information:

"yyy" shown to the right have nothing to do with the jitter value. "XX" is the error counter, while "zz" is the focus drive value.

Note:

Jitter value appears on the front display.

4. Adjust tangential adjustment screw A (at inner periphery side of the jack shaft) so that the jitter value is minimized. (See [Fig. 1](#))
5. Adjust the radial tilt adjustment screw B (at outer periphery side of the main shaft) from the bottom so that the jitter value is minimized. (See [Fig. 3](#))
6. Play test disc T43 (outer periphery).
7. Adjust the tangential adjustment screw C (at outer periphery side of the jack shaft) so that the jitter value is minimized. (See [Fig. 3](#))
8. Play test disc T01 (inner periphery).

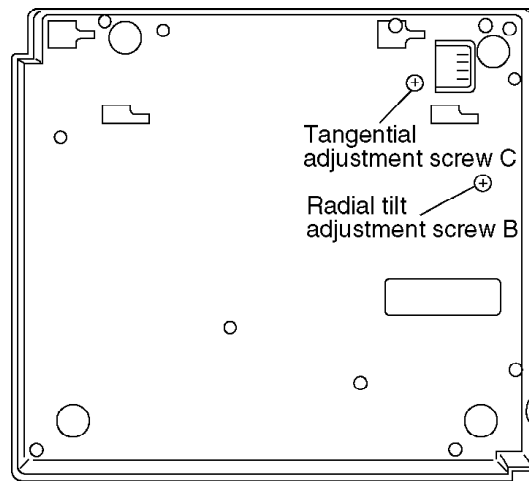
9. Adjust tangential adjustment screw A (at inner periphery side of the jack shaft) so that the jitter value is minimized. (See **Fig. 1**)

10. After adjustment is finished, lock the adjustment screws A, B and C in position using screw lock.

Note:

For the adjustment screw A, lock the tilt cam and traverse base in position securely using screw lock.

Fig. 3



10.4.1.3. Check after adjustment

Play test disc or any other disc to make sure there is no picture degradation in the inner, middle and outer peripheries, and no audio skipping.

10.5. Electric Adjustment (LCD)

- Please adjust an electric adjustment of LCD only when there are abnormality and a level change in the image after exchanging parts.
- Set the control "BRIGHT" to the center when adjusting the LCD.
- After replacing the liquid crystal panel, check and adjust as follows.
- Please fix the decision when it adjusts it which "ENTER" button.

The LCD panel adjustment entry

the test disk replay video signal (10 steps color bar)

While pushing "BACKSKIP" and "PAUSE" of the body at the same time, push "MENU" of remote control.

Push the "STOP" button of the body. (It becomes F2 mode.)

Push "FORWARDSKIP" button twice. It makes F4 mode (The LCD panel adjustment mode).

Push the "PLAY" button.

It replays a signal before stop.

Push the "PAUSE" ("STILL") button .

The way of coming to the normal mode

(Way of CANCEL)

Power supply OFF, (It pulls out DC power supply).



Once again, make a power supply "ON" condition.

By pushing the "STOP" button, it makes a stop condition.



Push the "CANCEL" button of remote control.

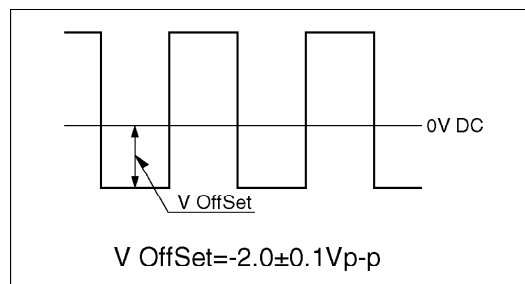
(If not making a stop condition, there is not an effect.)

10.5.1. Adjusting the VCO oscillating frequency





Standard for carrying out the adjustment	Check point	
Synchronization on the LCD screen is disordered by replacing the circuit parts relating to VCO	TP8201	
Adjustment procedure	Adjusting to higher value	Adjusting to lower value
Press "1" on the main body / remote control	Press  on the main unit / remote control	Press  on the main unit / remote control
Actual adjustment	Input video signal	
Change the video input to outer one. Input no signal into the input terminal. (Set the VCO to free run.) $f = 15.680 \text{ kHz} \pm 0.1 \text{ kHz}$	-----	

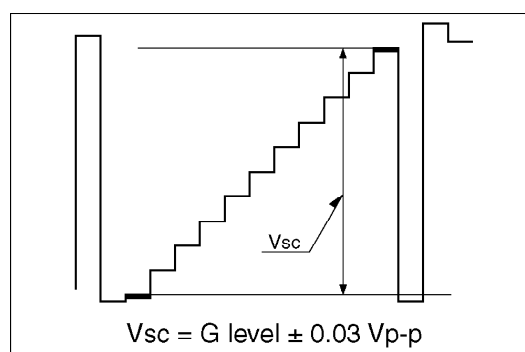
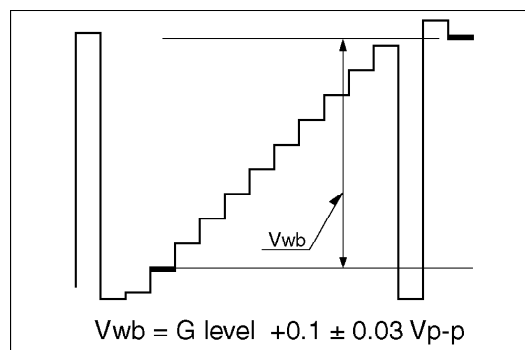
10.5.2. Adjusting offset voltage for LCD Bias

Standard for carrying out the adjustment	Check point	
Any noise such as striping on the screen is observed	TP8401	
Adjustment procedure	Adjusting to higher value	Adjusting to lower value
Press "3" on the main body / remote control	Press  on the main unit / remote control	Press  on the main unit / remote control
Actual adjustment	Input video signal	
In V OffSet = -2.0 ± 0.1 Vp-p, check the screen visually and adjust the striped pattern to the minimum	10-step monochrome, DVDT-S15 title 23 / Baby, DVDT-S15 Title 1	







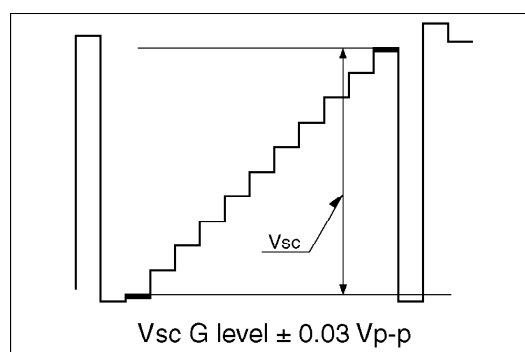
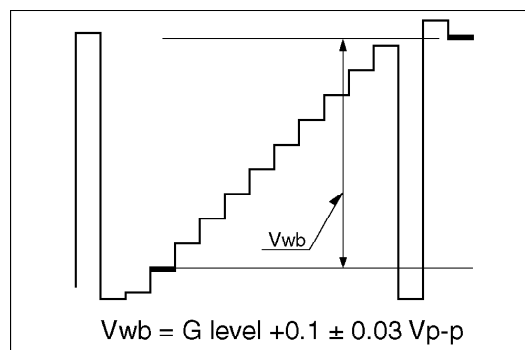
10.5.3. Adjusting white balance, red/sub-contrast and red

Standard for carrying out the adjustment	Check point	
White balance gap is remarkable	TP8602 TP8603	
Adjustment procedure	Adjusting to higher value	Adjusting to lower value
Press "6" on the main body / remote control	Press  and  on the main unit / remote control	Press  and  on the main unit / remote control
Actual adjustment	Input video signal	
In $V_{wb} = G \text{ level } +0.1 \pm 0.03 \text{ Vp-p}$ and $V_{sc} = G \text{ level } \pm 0.03 \text{ Vp-p}$, check the screen visually	10-step monochrome	





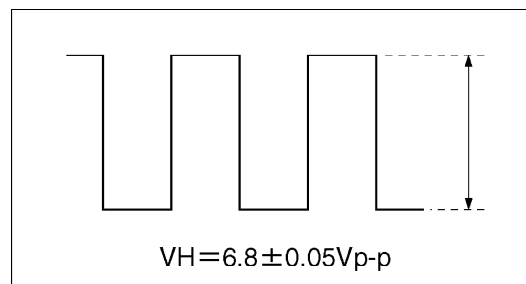
10.5.4. Adjusting white balance, blue/sub-contrast and blue

Standard for carrying out the adjustment	Check point	
White balance gap is remarkable	TP8603 TP8604	
Adjustment procedure	Adjusting to higher value	Adjusting to lower value
Press "7" on the main body / remote control	Press  and  on the main unit / remote control	Press  and  on the main unit / remote control
Actual adjustment	Input video signal	
In $V_{wb} = G \text{ level } +0.1 \pm 0.03 \text{ Vp-p}$ and $V_{sc} = G \text{ level } \pm 0.03 \text{ Vp-p}$, check the screen visually	10-step monochrome	





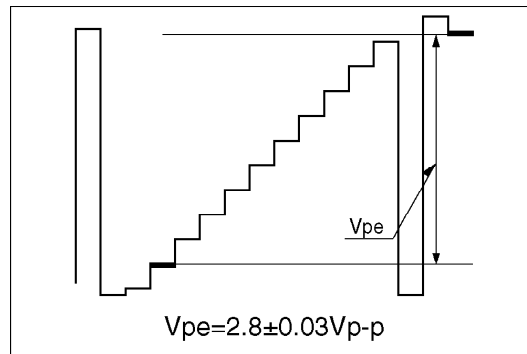
10.5.5. Adjusting amplitude voltage for LCD Bias

Standard for carrying out the adjustment	Check point	
-----	TP8401	
Adjustment procedure	Adjusting to higher value	Adjusting to lower value
Press "2" on the main body / remote control	Press  on the main unit / remote control	Press  on the main unit / remote control
Actual adjustment	Input video signal	
VH = 6.8 ± 0.5 Vp-p	10-step monochrome	





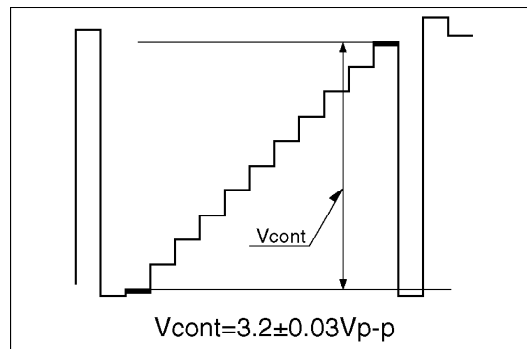
10.5.6. Adjusting pedestal

Standard for carrying out the adjustment	Check point	
-----	TP8603	
Adjustment procedure	Adjusting to higher value	Adjusting to lower value
Press "4" on the main body / remote control	Press  on the main unit / remote control	Press  on the main unit / remote control
Actual adjustment	Input video signal	
Vpe = 2.8 ± 0.03 Vp-p	10-step monochrome	





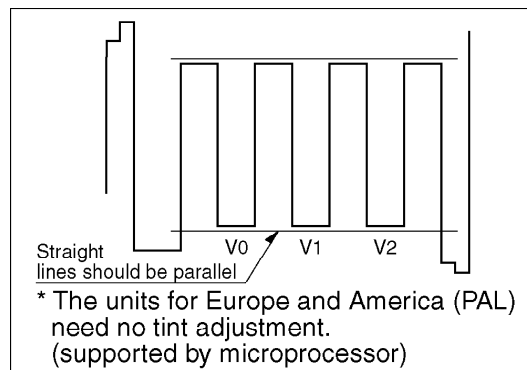
10.5.7. Adjusting contrast

Standard for carrying out the adjustment	Check point	
-----	TP8603	
Adjustment procedure	Adjusting to higher value	Adjusting to lower value
Press "4" on the main body / remote control	Press  on the main unit / remote control	Press  on the main unit / remote control
Actual adjustment	Input video signal	
$V_{cont} = 3.2 \pm 0.03 V_{p-p}$	10-step monochrome	





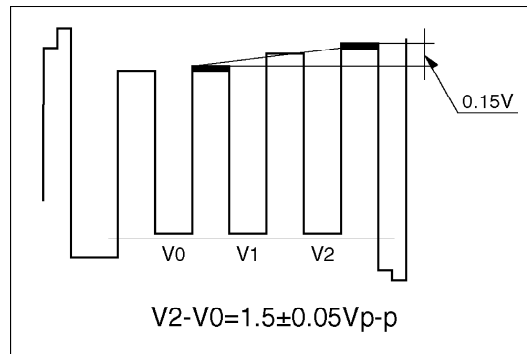
10.5.8. Adjusting TINT

Standard for carrying out the adjustment	Check point	
-----	TP8604	
Adjustment procedure	Adjusting to higher value	Adjusting to lower value
Press "5" on the main body / remote control	Press  on the main unit / remote control	Press  on the main unit / remote control
Actual adjustment	Input video signal	
Waveform adjustment = parallel - straight line	Color bar	



10.5.9. Adjusting color

Standard for carrying out the adjustment	Check point	
-----	TP8604	
Adjustment procedure	Adjusting to higher value	Adjusting to lower value
Press "5" on the main body / remote control	Press  on the main unit / remote control	Press  on the main unit / remote control
Actual adjustment	Input video signal	
$V2 - V0 = 1.5 \pm 0.05 \text{ Vp-p}$	Color bar	



10.6. Electrical confirmation (Confirming video output)

10.6.1. Confirming video output (luminance signal)

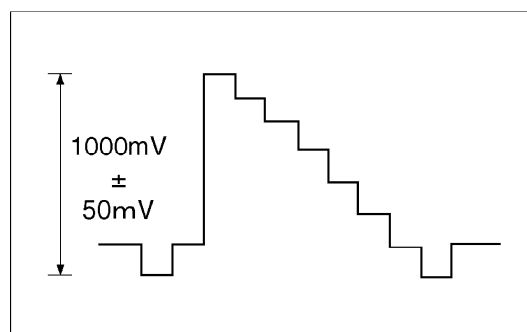
Measurement point	Check point	Mode	Disc
Video output terminal	S video output terminal	Color bar play 75%	DVDT-S15 or DVDT-S20
Measuring equipment		Confirmation value	
Oscilloscope		100 Vp-p \pm 50 mV	

Purpose:

To maintain video signal output compatibility

1. Connect the monitor TV to the luminance signal (Y) of the S video output terminal and terminate at 75 ohms.
2. Choose a color bar from the DVD test disc title (title 46 or title 12) and play.
3. Confirm that the luminance signal output (including think chip) has the following value.

Confirmation value = $1000 \pm 50 \text{ mVp-p}$



10.6.2. Confirming video output (chrominance signal)

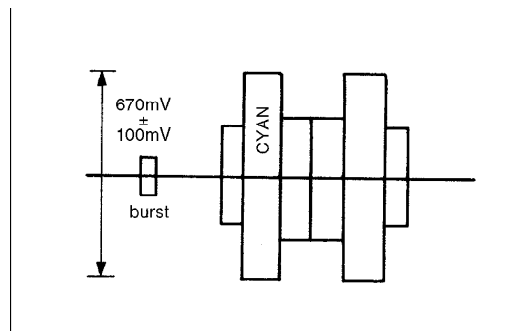
Measurement point	Check point	Mode	Disc
Video output terminal	S video output terminal	Color bar play 75%	DVDT-S15 or DVDT-S20
Measuring equipment		Confirmation value	
Oscilloscope		670 Vp-p \pm 100 mV	

Purpose:

To maintain video signal output compatibility

1. Connect the monitor TV to the chrominance signal (C) of the S video output terminal and terminate at 75 ohms.
2. Choose a color bar from the DVD test disc title (title 46 or title 12) and play.
3. Confirm that the chrominance signal output (colored area of cyanogen) has the following value.

Confirmation value = 670 \pm 100 mVp-p



11. Abbreviations

INITIAL/LOGO		ABBREVIATIONS
A	A0~UP	ADDRESS
	ACLK	AUDIO CLOCK
	AD0~UP	ADDRESS BUS
	ADATA	AUDIO PES PACKET DATA
	ALE	ADDRESS LATCH ENABLE
	AMUTE	AUDIO MUTE
	AREQ	AUDIO PES PACKET REQUEST
	ARF	
	ASI	AUDIO RF
	ASO	SERVO AMP INVERTED INPUT
	ASYNC	SERVO AMPOUTPUT
		AUDIO WORD DISTINCTION SYNC
B	BCK	BIT CLOCK (PCM)
	BCKIN	BIT CLOCK INPUT
	BDO	BLACK DROP OUT
	BLKCK	SUB CODE BLOCK CLOCK
	BOTTOM	CAP. FOR BOTTOM HOLD
	BYP	BYPATH
	BYTCK	BYTE CLOCK

INITIAL/LOGO		ABBREVIATIONS
C	CAV	CONSTANT ANGULAR
	CBDO	VELOCITY
	CD	CAP. BLACK DROP OUT
	CDSCK	COMPACT DISC
	CDSRDATA	CD SERIAL DATA CLOCK
		CD SERIAL DATA
	CDRF	CD RF (EFM) SIGNAL
	CDV	COMPACT DISC-VIDEO
	CHNDATA	CHANNEL DATA
	CKSL	SYSTEM CLOCKSELECT
	CLV	CONSTANT LINEAR VELOCITY
	COFTR	CAP. OFF TRACK
	CPA	CPU ADDRESS
	CPCS	CPU CHIP SELECT
	CPDT	CPU DATA
	CPH1~3	CLOCK PULSE SOURCE DRIVE
	CPUADR	
	CPUADT	CPU ADDRESS LATCH
	CPUIRQ	CPU ADDRESS DATA BUS
	CPRD	CPU INTERRUPT REQUEST
	CPV	CPU READ ENABLE
	CPWR	GATEDRIVER CLOCK PULSE
	CS	CPU WRITE ENABLE
	CSYNCIN	CHIP SELECT
	CSYNCOU	COMPOSITE SYNC IN
		COMPOSITE SYNC OUT
D	DACCK	D/A CONVERTER CLOCK
	DEEMP	DEEMPHASIS BIT ON/OFF
	DEMPH	DEEMPHASIS SWITCHING
	DIG0~UP	FL DIGIT OUTPUT
	DIN	DATA INPUT
	DMSRCK	DM SERIAL DATA READ
	DMUTE	CLOCK
	DO	DIGITAL MUTE CONTROL
	DOUT0~UP	DROP OUT
		DATAOUTPUT
	DRF	DATA SLICE RF (BIAS)
	DRPOUT	DROP OUT SIGNAL
	DREQ	DATA REQUEST
	DRESP	DATA RESPONSE
	DSC	DIGITAL SERVO CONTROLLER
	DSL	
	DSL	
	DSL	
	DVD	DATA SLICE LOOP FILTER
		DIGITAL VIDEO DISC

INITIAL/LOGO		ABBREVIATIONS
E	EC	ERROR TORQUE CONTROL
	ECR	ERROR TORQUE CONTROL REFERENCE
	ENCSEL	ENCODER SELECT
	ETMCLK	EXTERNAL M CLOCK (81MHz/40.5MHz)
	ETSCLK	EXTERNAL S CLOCK (54MHz)
F	FBAL	FOCUS BALANCE
	FCLK	FRAME CLOCK
	FE	FOCUS ERROR
	FFI	FOCUS ERROR AMP
	FEO	INVERTED INPUT
	FG	FOCUS ERROR AMP OUTPUT
	FSC	FREQUENCY GENERATOR
	FSCK	FREQUENCY SUB CARRIER FS (384 OVER SAMPLING) CLOCK
G	GND	COMMON GROUNDING (EARTH)
H	HA0~UP	HOST ADDRESS
	HD0~UP	HOST DATA
	HINT	HOST INTERRUPT
	HRXW	HOST READ/WRITE
I	IECOUT	IEC958 FORMAT DATA OUTPUT
	IPFRAG	INTERPOLATION FLAG
	IREF	I (CURRENT) REFERENCE
	ISEL	INTERFACE MODE SELECT
L	LDON	LASER DIODE CONTROL
	LPC	LASER POWER CONTROL
	LRCK	L CH/R CH DISTINCTION CLOCK

INITIAL/LOGO		ABBREVIATIONS
M	MA0~UP	MEMORY ADDRESS
	MCK	MEMORY CLOCK
	MCKI	MEMORY CLOCK INPUT
	MCLK	MEMORY SERIAL COMMAND
	MDATA	CLOCK
	MDQ0~UP	MEMORY SERIAL COMMAND
	MDQM	DATA
	MLD	MEMORY DATA INPUT/OUTPUT
	MPEG	MEMORY DATA I/O MASK
		MEMORY SERIAL COMMAND LOAD
O	ODC	MOVING PICTURE EXPERTS GROUP
	OEH	OPTICAL DISC CONTROLLER
	OEV 1, 2	SOURCE DRIVER OUTPUT ENABLE
	OFTR	GATE DRIVER OUTPUT
	OSCI	ENABLE
	OSCO	OFF TRACKING
	OSD	OSCILLATOR INPUT
		OSCILLATOR OUTPUT ON SCREEN DISPLAY
P	P1~UP	PORT
	PCD	CD TRACKING PHASE
	PCK	DIFFERENCE
	PDVD	PLL CLOCK
	PEAK	DVD TRACKING PHASE
	PLLCLK	DIFFERENCE
	PLLOK	CAP. FOR PEAK HOLD
	PWMCTL	CHANNEL PLL CLOCK
	PWMDA	PLL LOCK
	PWMOA, B	PWM OUTPUT CONTROL
		PULSE WAVE MOTOR DRIVEA
		PULSE WAVE MOTOR OUT A, B

INITIAL/LOGO		ABBREVIATIONS
R	RE	READ ENABLE
	RFENV	RF ENVELOPE
	RFO	RF PHASE DIFFERENCE
	RS	OUTPUT
	RSEL	(CD-ROM) REGISTER SELECT
	RST	RF POLARITY SELECT
	RSV	RESET
		RESERVE

INITIAL/LOGO		ABBREVIATIONS
S	SBI0, 1	SERIAL DATA INPUT
	SBO0	SERIAL DATA OUTPUT
	SBT0, 1	SERIAL CLOCK
	SCK	SERIAL DATA CLOCK
	SCKR	AUDIO SERIAL CLOCK
	SCL	RECEIVER
	SCLK	SERIAL CLOCK
	SDA	SERIAL CLOCK
	SEG0~UP	SERIAL DATA
	SELCLK	FL SEGMENT OUTPUT
	SEN	SELECTCLOCK
	SIN1, 2	SERIAL PORT ENABLE
	SOUT1, 2	SERIAL DATA IN
	SPDI	SERIAL DATA OUT
	SPDO	SERIAL PORT DATA INPUT
	SPEN	SERIAL PORT DATA OUTPUT
	SPRCLK	SERIAL PORT R/W ENABLE
	SPWCLK	SERIAL PORT READ CLOCK
	SQCK	SERIAL PORT WRITE CLOCK
	SQCX	SUB CODE Q CLOCK
	SRDATA	SUBCODE Q DATA READ
	SRMADR	CLOCK
	SRMDT0~7	SERIAL DATA
		SRAM ADDRESS BUS
	SS	SRAM DATA BUS 0~7
	STAT	START/STOP
	STCLK	STATUS
	STD0~UP	STREAM DATA CLOCK
	STENABLE	STREAM DATA
		STREAM DATA INPUT ENABLE
	STH	SOURCE START PULSE
	STSEL	STREAM DATA
	STV	POLARITYSELECT
	STVALID	GATE DRIVER SCAN START
	SUBC	PULSE
	SBCK	STREAM DATA VALIDITY
	SUBQ	SUB CODE SERIAL
	SYSCLK	SUB CODE CLOCK
		SUB CODE Q DATA
		SYSTEM CLOCK

INITIAL/LOGO		ABBREVIATIONS
T	TE	TRACKING ERROR
	TIBAL	BALANCE CONTROL
	TID	BALANCE OUTPUT 1
	TIN	BALANCE INPUT
	TIP	BALANCE INPUT
	TIS	BALANCE OUTPUT 2
	TPSN	OP AMP INPUT
	TPSO	OP AMP OUTPUT
	TPSP	OP AMP INVERTED INPUT
	TRCRS	TRACK CROSS SIGNAL
	TRON	TRACKING ON
	TRSON	TRAVERSE SERVO ON

INITIAL/LOGO		ABBREVIATIONS
V	VBANK	V BLANKING
	VCC	COLLECTOR POWER SUPPLY VOLTAGE
	VCDCONT	VIDEO CD CONTROL (TRACKING BALANCE)
	VDD	DRAIN POWER SUPPLY VOLTAGE
	VFB	VIDEO FEED BACK
	VREF	VOLTAGE REFERENCE
	VSS	SOURCE POWER SUPPLY VOLTAGE
W	WAIT	BUS CYCLE WAIT
	WDCK	WORD CLOCK
	WEH	WRITE ENABLE HIGH
	WSR	WORD SELECT RECEIVER

INITIAL/LOGO		ABBREVIATIONS
X	X	X' TAL
	XALE	X ADDRESS LATCH ENABLE
	XAREQ	X AUDIO DATA REQUEST
	XCDROM	X CD ROM CHIP SELECT
	XCS	X CHIP SELECT
	XCSYNC	X COMPOSITE SYNC
	XDS	X DATA STROBE
	XHSYNCO	X HORIZONTAL SYNC OUTPUT
	XHINT	XH INTERRUPT REQUEST
	XI	X' TAL OSCILLATOR INPUT
	XINT	X INTERRUPT
	XMW	X MEMORY WRITE ENABLE
	XO	X' TAL OSCILLATOR OUTPUT
	XRE	X READ ENABLE
	XSRMCE	X SRAM CHIP ENABLE
	XSRMOE	X SRAM OUTPUT ENABLE
	XSRMWE	X SRAM WRITE ENABLE
	XVCS	X V-DEC CHIP SELECT
	XVDS	X V-DEC CONTROL BUS
	XVSYNCO	STROBE
		XVERTICAL SYNC OUTPUT

12. VOLTAGE CHART

12.1. RECHARGE BATTERY P.C.B.

12.2. MAIN P.C.B.

12.3. LCD DRIVE P.C.B.

13. BLOCK DIAGRAM

13.1. OVERALL BLOCK DIAGRAM

13.2. POWER SUPPLY BLOCK DIAGRAM

13.3. SERVO BLOCK DIAGRAM

13.4. AUDIO/VIDEO INPUT/OUTPUT BLOCK DIAGRAM

13.5. LCD DRIVE BLOCK DIAGRAM

14. SCHEMATIC DIAGRAM

14.1. INTERCONNECTION SCHEMATIC DIAGRAM

14.2. RECHARGE BATTERY SCHEMATIC DIAGRAM

14.3. POWER SUPPLY SECTION (MAIN P.C.B. (1/10)) SCHEMATIC DIAGRAM

14.4. SERVO SECTION (MAIN P.C.B. (2/10)) SCHEMATIC DIAGRAM

14.5. FEP SECTION (MAIN P.C.B. (3/10)) SCHEMATIC DIAGRAM

14.6. ADSC SECTION (MAIN P.C.B. (4/10)) SCHEMATIC DIAGRAM

14.7. ODC SECTION (MAIN P.C.B. (5/10)) SCHEMATIC DIAGRAM

14.8. AV DECORDER SECTION (MAIN P.C.B. (6/10)) SCHEMATIC DIAGRAM

14.9. AUDIO OUT SECTION (MAIN P.C.B. (7/10)) SCHEMATIC DIAGRAM

14.10. VIDEO OUT SECTION (MAIN P.C.B. (8/10)) SCHEMATIC DIAGRAM

14.11. CPU SECTION (MAIN P.C.B. (9/10)) SCHEMATIC DIAGRAM

14.12. OPERATION SECTION (MAIN P.C.B. (10/10)) SCHEMATIC DIAGRAM

14.13. LCD DRIVE SCHEMATIC DIAGRAM

15. CIRCUIT BOARD ASSEMBLY

15.1. RECHARGE BATTERY P.C.B.

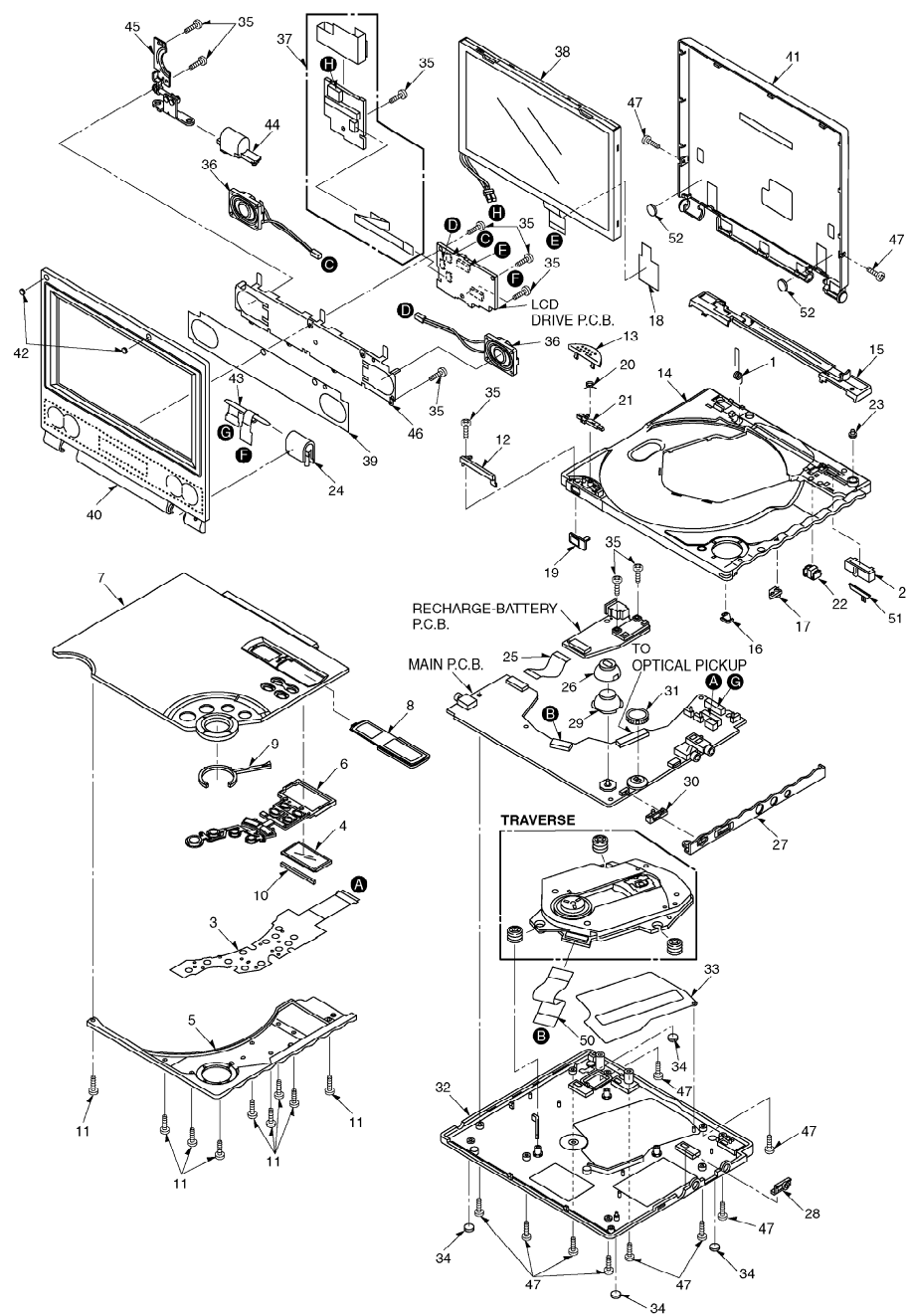
15.2. MAIN P.C.B. (1/2) (COMPONENT SIDE)

15.3. MAIN P.C.B. (2/2) (FOIL SIDE)

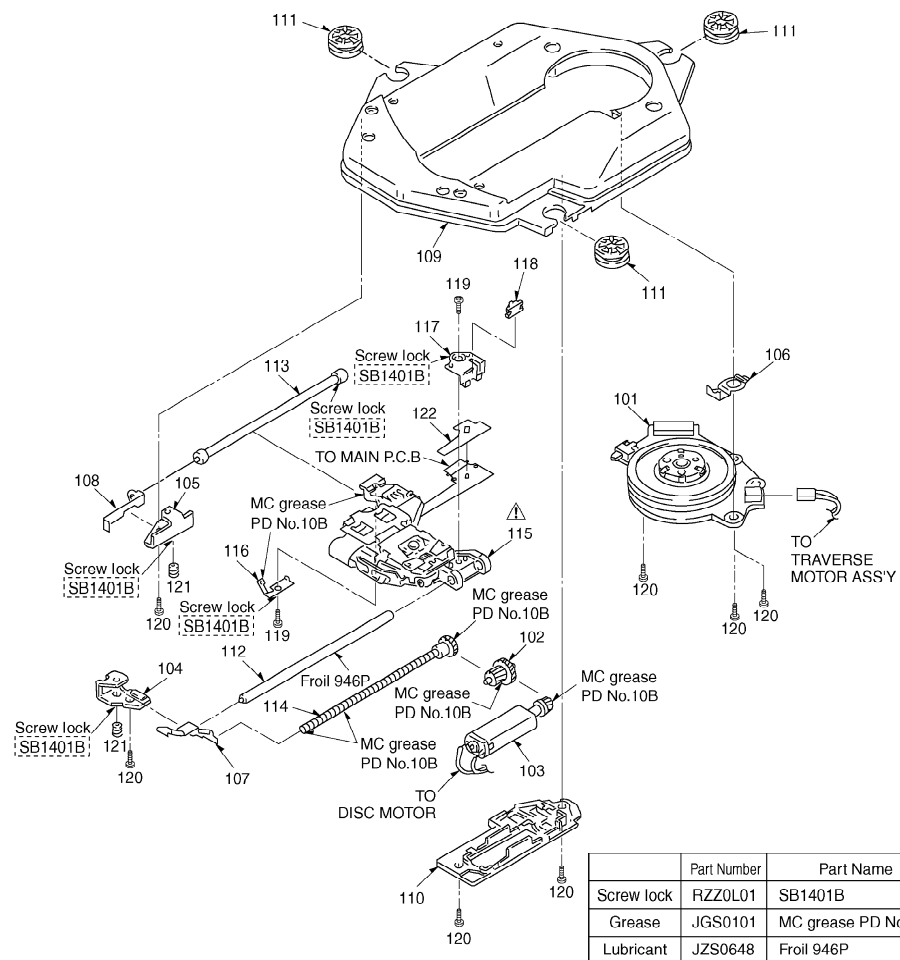
15.4. LCD DRIVE P.C.B.

16. EXPLODED VIEWS

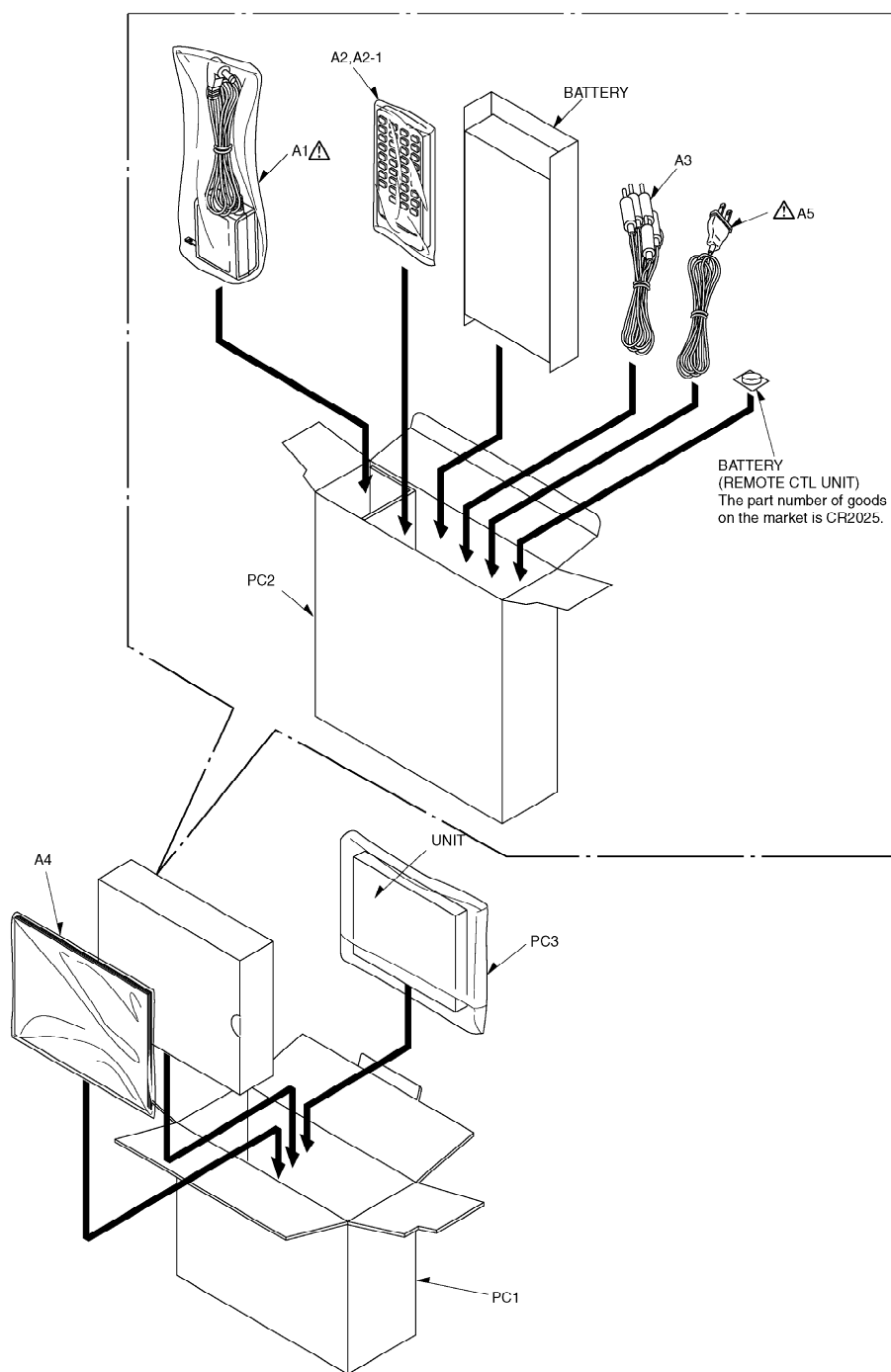
16.1. Casing Parts & Mechanism Section Exploded View



16.2. Mechanism Section Exploded View



16.3. Packing & Accessories Section Exploded View



17. REPLACEMENT PARTS LIST

Notes:

*Important safety notice:

Components identified by \triangle mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.

When replacing any of components, be sure to use only manufactures specified parts shown in the parts list.

***Warning:** This product uses a laser diode. Refer to caution statements.

***ACHTUNG:** Die lasereinheit nicht zerlegen. Die lasereinheit darf nur gegen enic vom hersteller spezifizierte einheit ausgetauscht werden.

***Capacity values** are in microfarads (μ F) unless specified otherwise, P=Pico-farads (pF), F= Farads (F).

***Resistance values** are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM).

***The marking (RTL)** indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

***"<IA>"**,marks in Remarks indicate languages of instruction manuals. [<IA>:Chinese]

All parts that are supplied by S.P.C..

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	RMB0675	OPEN SPRING	1	
2	RMR1379-W	FPC HOLDER	1	
3	K0RE01000001	MEMBRANE SW	1	
4	L5ACBDB00001	LCD PANEL	1	
5	RGK1394-A	DISC COVER ORNAMENT	1	
6	RGU1994-S	OPERATION BUTTON	1	
7	RKF0621-S	DISC COVER	1	
8	RKW0649-Q	LCD WINDOW	1	
9	RKW0650-Q	NABI.INDICATOR	1	
10	RSQ0078	ZEBURA RUBBER	1	
11	XQN14+BG3FC	SCREW	9	
12	RGK1392-A	OPEN BUTTON ORNAMENT	1	
13	RGU1992-S	OPEN BUTTON	1	
14	RKM0441-A	MAIN CABINET	1	
15	RKQ0242-S	HINGE BASE	1	
16	RKW0645-Q	LIGHT PIECE(A)	1	
17	RKW0646-Q	LIGHT PIECE(B)	1	
18	RSC0599	SHIELD SHEET	1	
19	RKW0648-Q	REMO.SENSOR WINDOW	1	
20	RMB0674	SPRING	1	
21	RML0611	LOCK LEVER	1	
22	RMR1380-A	STOPPER	1	
23	RMR1409-W	BUTTON	1	
24	RKQ0244-S	HINGE COVER(B)	1	
25	REE1111	FFC(12P)	1	
26	RGK1393-A	NABI.BUTTON CAP	1	
27	RGK1397-A	SIDE ORNAMENT	1	
28	RGU1993-A	BUTTON	1	
29	RGV0282-S	NAVIGATOR BUTTON	1	
30	RGV0283-A	SLIDE KNOB	1	
31	RGW0371-A	H.P CAP	1	
32	RKS0347D-S	BOTTOM CABINET	1	
33	RMZ0572	INSULATION SHEET	1	
34	VKA0313	LEG	4	
35	XQN17+BG4FN	SCREW	10	
36	EAS2D01C0	SPEAKER	2	
37	N0GC1J000001	INVERTER ASS'Y	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
38	EDTCA39QKF	LCD ASS'Y	1	
39	RGK1395-K	ORNAMENT SHEET	1	
40	RGK0868-S	MONITOR CABINET	1	
41	RGQ0299-S	MONITOR COVER	1	
42	RGQ0300-Q	CUSHION	2	
43	RJB2414A	MONITOR FPC	1	
44	RKC0017	HINGE	1	
45	RKQ0243-S	HINGE COVER(A)	1	
46	RSC0587	SHIELD PLATE	1	
47	XQN17+BG6FN	SCREW	11	
50	VWJ20D0038AA	FFC(20P)	1	
51	RMR1401-W	MEMBRANE FIX PIECE	1	
52	RMG0566-K	SPACER	2	
101	BKL2E01KA	DISC MOTOR	1	
102	VDG1421	INTERFACE GEAR	1	
103	VEM0727	TRAVERSE MOTOR ASS'Y	1	
104	VMA0E21	MAIN SHAFT HOLDER	1	
105	VMA0E22	SUB SHAFT HOLDER	1	
106	VMC1590	EARTH SPRING	1	
107	VMC1592	SPRING	1	
108	VMC1593	SPRING	1	
109	VMD3801	TRAVERSE BASE	1	
110	VMD3802	MOTOR COVER	1	
111	VMG1282	DAMPER	3	
112	VMS6730	MAIN SHAFT	1	
113	VXJ0232	SUB SHAFT ASS'Y	1	
114	VXJ0233	DRIVE SHAFT ASS'Y	1	
115	VED0447	OPTICAL PICK-UP	1	
116	VMC1594	SPRING	1	
117	VMC1591	SPRING	1	
118	VMD3803	NUT PLATE	1	
119	XQN14+C2	SCREW	2	
120	XQN17+CG45	SCREW	7	
121	XXE26C4	SCREW	2	
122	RMZ0561	EMC SHEET	1	
A1	N0JEEJ000001	AC ADAPTOR	1	
A2	N2QAHC000009	REMOTE CONTROL ASS'Y	1	
A2-1	NTR114172005	BATTERY COVER	1	
A3	RJL3X001X15	A/V CORD	1	K2KA4CB00001
A4	RQT5935-K	OPERATING INSTRUCTIONS	1	
A5	RJA0055-1K	AC CORD	1	
C1001,02	ECUVNC105ZFN	16V 1U	2	F1J1C105A063
C1005	ECUVNC105KBN	16V 1U	1	F1J1C105A091
C1006	ECUZNC104ZFN	16V 0.1U	1	F1H1C1040008
C1007,08	ECUV1H101KCV	50V 100P	2	F1H1H101A720
C1009	ECUZNC104ZFN	16V 0.1U	1	F1H1C1040008
C1011	ECUX1H102KBV	50V 1000P	1	
C1012	ECUVNC105KBN	16V 1U	1	F1J1C105A091
C1013,14	ECUZNC104ZFN	16V 0.1U	2	F1H1C1040008
C1015	ECUV1C224KBN	16V 0.22U	1	F1J1C224A091
C1016	ECUVNJ105KBV	63V 1U	1	F1H0J105A002

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C1017	RCST1CY106RG	16V 10U	1	F3F1C1060002
C1018	ECUV1H101JCV	50V 100P	1	F1H1H101A004
C1019,20	RCST1CY106RG	16V 10U	2	F3F1C1060002
C1021	ECUV1H151KBV	50V 150P	1	
C1022	ECUV1H271KBV	50V 270P	1	F1H1H271A009
C1023	ECUVNC105KBN	16V 1U	1	F1J1C105A091
C1024	ECUX1H102KBV	50V 1000P	1	
C1025	ECUX1H682KBV	50V 6800P	1	
C1026	ECUX1H182KBV	50V 1800P	1	ECJ1XB1H182K
C1027	ECUV1H332KBV	50V 3300P	1	F1H1H332A013
C1028	ECUX1H182KBV	50V 1800P	1	ECJ1XB1H182K
C1029,30	ECUX1H102KBV	50V 1000P	2	
C1031	ECUVNC105ZFN	16V 1U	1	F1J1C105A063
C1034-37	RCST1AX476RG	10V 47U	4	F3G1A4760002
C1038	ECUVNC105ZFN	16V 1U	1	F1J1C105A063
C1042	RCST1CX226RG	16V 22U	1	F3G1C2260001
C1043,44	ECUVNC105ZFN	16V 1U	2	F1J1C105A063
C1045	RCST1CX226RG	16V 22U	1	F3G1C2260001
C1048	RCST1CX226RG	16V 22U	1	F3G1C2260001
C1051-54	RCST1CX226RG	16V 22U	4	F3G1C2260001
C1063	ECUV1C106KBP	16V 10U	1	F1L1C106A011
C1070	ECUX1H102KBV	50V 1000P	1	
C1071	ECUV1H101KCV	50V 100P	1	F1H1H101A720
C1072	ECUX1H182KBV	50V 1800P	1	ECJ1XB1H182K
C1073	ECUV1C224KBN	16V 0.22U	1	F1J1C224A091
C1101	RCST1CX226RG	16V 22U	1	F3G1C2260001
C1102	ECUVNE105KBM	25V 1U	1	
C1103	ECUVNC105ZFN	16V 1U	1	F1J1C105A063
C1104	ECUV1A335KBN	10V 3.3U	1	F1J1A335A005
C1105	F2G1E470A010	25V 47U	1	
C1106	ECUV1C106KBP	16V 10U	1	F1L1C106A011
C1111	RCST1CX226RG	16V 22U	1	F3G1C2260001
C1401	ECUZNC104ZfV	16V 0.1U	1	F1H1C1040008
C1402	ECUX1H102KBV	50V 1000P	1	
C1403	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C1404	ECUX1H102KBV	50V 1000P	1	
C1405	ECUZNC104ZfV	16V 0.1U	1	F1H1C1040008
C1406	ECUV1C106KBP	16V 10U	1	F1L1C106A011
C1407,08	ECUVNH103KBV	50V 0.01U	2	F1H1H103A748
C1409,10	F2G1C680A009	16V 68U	2	
C1411	ECUV1C106KBP	16V 10U	1	F1L1C106A011
C1412	ECUV1A335KBN	10V 3.3U	1	F1J1A335A005
C1413	ECUV1A224KBV	10V 0.22U	1	F1H1A224A001
C1414	ECUVNC104KBV	16V 0.1U	1	
C1415	ECUZNC104ZfV	16V 0.1U	1	F1H1C1040008
C1416	ECUV1H391JCV	50V 390P	1	F1H1H391A004
C1417	ECUV1A224KBV	10V 0.22U	1	F1H1A224A001
C1418	ECUVNC333KBV	16V 0.033U	1	F1H1C333A071
C1419	ECUZNC104ZfV	16V 0.1U	1	F1H1C1040008
C1420	ECUVNC105ZFN	16V 1U	1	F1J1C105A063
C1423	ECUVNJ105KBV	63V 1U	1	F1H0J105A002
C2001	ECUZNC104ZfV	16V 0.1U	1	F1H1C1040008
C2004,05	ECUVNH102JCV	50V 1000P	2	F1H1H102A737
C2006,07	ECUV1H331JCV	50V 330P	2	F1H1H331A004

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C2008	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
C2009	ECUVNH102JCV	50V 1000P	1	F1H1H102A737
C2010	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
C2011,12	ECUX1H681JCV	50V 680P	2	
C2013	ECUX1H682KBV	50V 6800P	1	
C2014	ECUX1H681JCV	50V 680P	1	
C2015,16	ECUVNC104KBV	16V 0.1U	2	
C2017	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
C2018	ECUV1H470JCV	50V 47P	1	
C2019,20	ECUZNC104ZFB	16V 0.1U	2	F1H1C1040008
C2021	ECUV1A335KBN	10V 3.3U	1	F1J1A335A005
C2022	ECUX1C183KBV	16V 0.018U	1	
C2023	RCST1AX476RG	10V 47U	1	F3G1A4760002
C2024	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
C2025	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C2026	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
C2027	ECUX1C474KBN	16V 0.47U	1	F1J1C474A091
C2028	ECUV1H221KBV	50V 220P	1	F1H1H2210001
C2030-35	ECUZNC104ZFB	16V 0.1U	6	F1H1C1040008
C2038,39	RCST1AX476RG	10V 47U	2	F3G1A4760002
C2040	ECUX1H822KBV	50V 8200P	1	
C2041	ECUX1C393KBV	16V 0.039U	1	
C2042	ECUVNC473KBV	16V 0.047U	1	F1H1C473A071
C2501	RCST1CX226RG	16V 22U	1	F3G1C2260001
C2502	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
C2503-08	ECUV1H332KBV	50V 3300P	6	F1H1H332A013
C2511,12	ECUZNC104ZFB	16V 0.1U	2	F1H1C1040008
C2513	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C2514	ECUVNE153KBV	25V 0.015U	1	F1H1E153A050
C2515	ECUVNC104KBV	16V 0.1U	1	
C2516	ECUVNE153KBV	25V 0.015U	1	F1H1E153A050
C2517,18	ECUZNC104ZFB	16V 0.1U	2	F1H1C1040008
C2519	ECUV1H101JCV	50V 100P	1	F1H1H101A004
C2520	ECUVNE153KBV	25V 0.015U	1	F1H1E153A050
C2521	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
C3001,02	RCST1AX476RG	10V 47U	2	F3G1A4760002
C3004	ECUV1A105ZFB	10V 1U	1	F1H1A105A030
C3006	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
C3007,08	ECUV1A105ZFB	10V 1U	2	F1H1A105A030
C3010,11	ECUZNC104ZFB	16V 0.1U	2	F1H1C1040008
C3012,13	ECUV1A105ZFB	10V 1U	2	F1H1A105A030
C3015	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
C3016	ECUV1A105ZFB	10V 1U	1	F1H1A105A030
C3017,18	ECUZNC104ZFB	16V 0.1U	2	F1H1C1040008
C3019,20	ECUV1A105ZFB	10V 1U	2	F1H1A105A030
C3021-23	ECUZNC104ZFB	16V 0.1U	3	F1H1C1040008
C3024	ECUV1A105ZFB	10V 1U	1	F1H1A105A030
C3026	ECUV1A105ZFB	10V 1U	1	F1H1A105A030
C3029	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
C3030	ECUV1A105ZFB	10V 1U	1	F1H1A105A030
C3032	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
C3034,35	ECUZNC104ZFB	16V 0.1U	2	F1H1C1040008
C3041,42	ECUZNC104ZFB	16V 0.1U	2	F1H1C1040008
C3061-64	ECUZNC104ZFB	16V 0.1U	4	F1H1C1040008

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C3065	ECUV1A105ZFB	10V 1U	1	F1H1A105A030
C3066	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
C3071-74	ECUZNC104ZFB	16V 0.1U	4	F1H1C1040008
C3075	ECUV1A105ZFB	10V 1U	1	F1H1A105A030
C3076	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
C3080	RCST1AX476RG	10V 47U	1	F3G1A4760002
C3081,82	ECUZNC104ZFB	16V 0.1U	2	F1H1C1040008
C3083,84	ECUVNJ105KBV	63V 1U	2	F1H0J105A002
C3201	ECUVNC104KBV	16V 0.1U	1	
C3202	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C3203	RCST1CX226RG	16V 22U	1	F3G1C2260001
C3204,05	F2G0G471A002	4V 470U	2	
C3206	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C3207	ECUVNC104KBV	16V 0.1U	1	
C3208	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
C3209	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C3210,11	RCST1CX226RG	16V 22U	2	F3G1C2260001
C3214	ERJ3GEY0R00	1/16W 0	1	
C3215	RCST1CX226RG	16V 22U	1	F3G1C2260001
C3299	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
C4001,02	RCST1AY106RC	10V 10U	2	F3F1A1060002
C4003,04	ECUV1H330JCV	50V 33P	2	F1H1H330A736
C4005,06	RCST1AX226RC	10V 22U	2	F3G1A226A002
C4007,08	ECUVNH102JCV	50V 1000P	2	F1H1H102A737
C4009,10	ECUVNJ105KBV	63V 1U	2	F1H0J105A002
C4011,12	RCST1AX476RG	10V 47U	2	F3G1A4760002
C4013,14	ECUVNH103KBV	50V 0.01U	2	F1H1H103A748
C4015,16	ECUZNC104ZFB	16V 0.1U	2	F1H1C1040008
C4017	F2G1C820A008	16V 82U	1	
C4018	RCST1AY106RC	10V 10U	1	F3F1A1060002
C4019	ECUVNC104KBV	16V 0.1U	1	
C4020	RCST1AX476RG	10V 47U	1	F3G1A4760002
C4021	RCST1AY106RC	10V 10U	1	F3F1A1060002
C4022	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
C4023	RCST1AX226RC	10V 22U	1	F3G1A226A002
C4024	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
C4025	RCST1AY106RC	10V 10U	1	F3F1A1060002
C4026,27	ECUZNC104ZFB	16V 0.1U	2	F1H1C1040008
C4028	RCST1AX226RC	10V 22U	1	F3G1A226A002
C4029	RCST1AY106RC	10V 10U	1	F3F1A1060002
C4051,52	ECUVNJ105KBV	63V 1U	2	F1H0J105A002
C4053	RCST1CX226RG	16V 22U	1	F3G1C2260001
C4054	ECUVNJ105KBV	63V 1U	1	F1H0J105A002
C4057	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
C4504	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
C5001-03	ECUZNC104ZFB	16V 0.1U	3	F1H1C1040008
C5004	RCST1CY106RG	16V 10U	1	F3F1C1060002
C5005	RCST1AX476RG	10V 47U	1	F3G1A4760002
C5006,07	ECUVNC104KBV	16V 0.1U	2	
C5008	ECUV1H101JCV	50V 100P	1	F1H1H101A004
C5009	RCST1AX476RG	10V 47U	1	F3G1A4760002
C5010-12	ECUZNC104ZFB	16V 0.1U	3	F1H1C1040008
C5013,14	ECUV1H391JCV	50V 390P	2	F1H1H391A004
C5015	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C5016	RCST1CY106RG	16V 10U	1	F3F1C1060002
C5018	ECUVNC473KBV	16V 0.047U	1	F1H1C473A071
C5019	ECUVNC104KBV	16V 0.1U	1	
C5020	ECUVNH102JCV	50V 1000P	1	F1H1H102A737
C5021	RCST1CY106RG	16V 10U	1	F3F1C1060002
C5022	ECUVNC104KBV	16V 0.1U	1	
C5023	ECUX1H561JCV	50V 560P	1	ECJ1XC1H561J
C5024	ECUX1H472KBV	50V 4700P	1	
C5025-28	ECUVNC104KBV	16V 0.1U	4	
C5030	ECUZNC104ZfV	16V 0.1U	1	F1H1C1040008
C6001	ECUZNC104ZfV	16V 0.1U	1	F1H1C1040008
C6002	ECUVNJ105KBV	63V 1U	1	F1H0J105A002
C6003	RCST1AX476RG	10V 47U	1	F3G1A4760002
C6004,05	ECUVNJ105KBV	63V 1U	2	F1H0J105A002
C6006	ECUZNC104ZfV	16V 0.1U	1	F1H1C1040008
C6007	ECUVNC104KBV	16V 0.1U	1	
C6010	RCST1CY106RG	16V 10U	1	F3F1C1060002
C6011	ECUZNC104ZfV	16V 0.1U	1	F1H1C1040008
C6012-14	RCST1CY106RG	16V 10U	3	F3F1C1060002
C6015	ECUX1H102KBV	50V 1000P	1	
C6201	RCST1AX476RG	10V 47U	1	F3G1A4760002
C6202-08	ECUZNC104ZfV	16V 0.1U	7	F1H1C1040008
C6301	ECUV1H101JCV	50V 100P	1	F1H1H101A004
C6302	ECUVNC104KBV	16V 0.1U	1	
C6303,04	ECUZNC104ZfV	16V 0.1U	2	F1H1C1040008
C6501	RCST1AX476RG	10V 47U	1	F3G1A4760002
C6502,03	ECUZNC104ZfV	16V 0.1U	2	F1H1C1040008
C6504	RCST1CY106RG	16V 10U	1	F3F1C1060002
C6505	ECUZNC104ZfV	16V 0.1U	1	F1H1C1040008
C6506	ECUX1H220JCV	50V 22P	1	ECJ1XC1H220J
C6507	ECUX1H100DCV	50V 10P	1	
C6508	ECUZNC104ZfV	16V 0.1U	1	F1H1C1040008
C7001,02	RCST1AX476RG	10V 47U	2	F3G1A4760002
C7011-21	ECUZNC104ZfV	16V 0.1U	11	F1H1C1040008
C7023-26	ECUZNC104ZfV	16V 0.1U	4	F1H1C1040008
C8001	ECUX1H390JCV	50V 39P	1	ECJ1XC1H390J
C8003-05	ECUVNC104KBV	16V 0.1U	3	
C8006	ECUVNJ105KBV	63V 1U	1	F1H0J105A002
C8007	ECUV1C223KBV	16V 0.022U	1	F1H1C223A001
C8008	ECUX1H010CCV	50V 1P	1	
C8010,11	ECUVNC104KBV	16V 0.1U	2	
C8012	RCST1CX226RG	16V 22U	1	F3G1C2260001
C8013-15	ECUVNC104KBV	16V 0.1U	3	
C8016-19	ECUVNJ105KBV	63V 1U	4	F1H0J105A002
C8020-22	ECUVNA225KBN	10V 2.2U	3	F1J1A225A003
C8023	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C8024	ECUV1C223KBV	16V 0.022U	1	F1H1C223A001
C8025	RCST1CX226RG	16V 22U	1	F3G1C2260001
C8026	ECUV1C223KBV	16V 0.022U	1	F1H1C223A001
C8027	ECUV1A474KBV	10V 0.47U	1	F1H1A474A025
C8028	ECST0JX336Z	6.3V 33U	1	
C8029	ECST1AY106Z	10V 10U	1	ECST1AY106R
C8030	ECUVNJ105KBV	63V 1U	1	F1H0J105A002
C8031	ECUV1H221KBV	50V 220P	1	F1H1H2210001

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C8032	ECUVNA225KBN	10V 2.2U	1	F1J1A225A003
C8040	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
C8041	ECUX1H270JCV	50V 27P	1	
C8042	ECUX1H560JCV	50V 56P	1	
C8048	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
C8049,50	ECUVNA105KBV	10V 1U	2	F1H1A105A028
C8201	ECUVNJ105KBV	63V 1U	1	F1H0J105A002
C8202-11	ECUV1H470JCV	50V 47P	10	
C8213	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C8215	ECUVNC105ZFN	16V 1U	1	F1J1C105A063
C8217	ECUVNC105ZFN	16V 1U	1	F1J1C105A063
C8218	RCST1CY106RG	16V 10U	1	F3F1C1060002
C8220	ECST0JY106Z	6.3V 10U	1	
C8222	ECUV1H121JCV	50V 120P	1	
C8224,25	ECUZNC104ZFB	16V 0.1U	2	F1H1C1040008
C8230	ECUX1H821KBV	50V 820P	1	ECJ1XB1H821K
C8231,32	ECUX1H221JCV	50V 220P	2	ECJ1XC1H221J
C8234	ECUX1H221JCV	50V 220P	1	ECJ1XC1H221J
C8401	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
C8402,03	ECUVNH103KBV	50V 0.01U	2	F1H1H103A748
C8404	RCST1CY106RG	16V 10U	1	F3F1C1060002
C8407	ECUVNC225KBM	16V 2.2U	1	F1K1C2250005
C8409,10	ECUZNC104ZFB	16V 0.1U	2	F1H1C1040008
C8601	ECUVNC105KBN	16V 1U	1	F1J1C105A091
C8602	ECUX1H102KBV	50V 1000P	1	
C8604	ECUVNC104KBV	16V 0.1U	1	
C8605	ECUV1H561KBV	50V 560P	1	F1H1H561A013
C8606	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
C8607	ECUVNJ105KBV	63V 1U	1	F1H0J105A002
C8802	ECUVNC105ZFN	16V 1U	1	F1J1C105A063
C8803	RCST1CX226RG	16V 22U	1	F3G1C2260001
C8805	ECUV1A105ZFB	10V 1U	1	F1H1A105A030
C8806	RCST1AX476RG	10V 47U	1	F3G1A4760002
C8807	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C8808	RCST1CX226RG	16V 22U	1	F3G1C2260001
C8809	ECUVNC105ZFN	16V 1U	1	F1J1C105A063
C8841	ECUZNC104ZFB	16V 0.1U	1	F1H1C1040008
D1011	RB051L40TE25	DIODE	1	B0JCPE000016
D1013,14	M1FM3	DIODE	2	B0JCMD000008
D1021	M1FM3	DIODE	1	B0JCMD000008
D1101	SB05-05CP	DIODE	1	B0JCCF000001
D1102-04	MA111-TX	DIODE	3	MA2J11100L
D1401	SFPA-73V	DIODE	1	B0JCPD000003
D1402,03	RB051L40TE25	DIODE	2	B0JCPE000016
D1405	M1FM3	DIODE	1	B0JCMD000008
D1406	MA8100L	DIODE	1	
D1408	MA111-TX	DIODE	1	MA2J11100L
D4001,02	MA142WATX	DIODE	2	MA3J142D0L
D4003,04	MA111-TX	DIODE	2	MA2J11100L
D4005	MA142WKTX	DIODE	1	MA3J142E0L
D4006	MA728-TX	DIODE	1	MA2J72800L
D6001	LN1271RAL	DIODE	1	LN1271RALTRP
D6002	LN1471Y-TR	LED	1	LN1471YTR

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
D6003	MA728-TX	DIODE	1	MA2J72800L
D6004	MA111-TX	DIODE	1	MA2J11100L
D6010	MA111-TX	DIODE	1	MA2J11100L
D6011	MA8047M	DIODE	1	MAZ80470M
D6012-14	MA728-TX	DIODE	3	MA2J72800L
D6301	MA728-TX	DIODE	1	MA2J72800L
D8001	MA77-TX	DIODE	1	MA2Z07700L
D8201	MA745WAGTX	DIODE	1	
D8202	MA77-TX	DIODE	1	MA2Z07700L
D8402	MA132WA	DIODE	1	MA3S132D
D8601	MA338-TX	DIODE	1	MA2X33800L
FP1002	K1MN12B00086	CONNECTOR(12P)	1	
FP1101	VJS4047C026	CONNECTOR(26P)	1	K1MN26A00026
FP1403	K1MN12B00086	CONNECTOR(12P)	1	
FP2501	RJS2A4620T	CONNECTOR(20P)	1	K1MN20B00049
FP5001	K1MN35B00009	CONNECTOR(35P)	1	
FP6001	RJS2A6130T	CONNECTOR(30P)	1	K1MN30A00023
FP8001	VJS3791B024	CONNECTOR(24P)	1	
FP8002	VJS3791B006	CONNECTOR(6P)	1	
FP8003,04	VJP4002B002W	CONNECTOR(2P)	2	
FP8005	VJS3801B030	CONNECTOR(30P)	1	
IC1001	C0DBAZZ00045	IC	1	
IC1002	C0EBM0000007	IC	1	
IC1003	C0CBAB000020	IC	1	
IC1401	MB3832APF	IC	1	
IC1402	XP132A1545SR	IC	1	B1DHFD000008
IC1403	C0EBM0000007	IC	1	
IC1405	XP132A1545SR	IC	1	B1DHFD000008
IC1406	C0EBE0000128	IC	1	
IC2001	MN67706EC	IC	1	
IC2501	AN8497SA	IC	1	
IC2502	NBC3904	IC	1	
IC3001	MN677533MP	IC	1	
IC3061	MNX7160BT1	IC	1	MNX7160BT10
IC3071	MNX7160BT1	IC	1	MNX7160BT10
IC3201	TK15430VTL	IC	1	C1AB00001308
IC3202	TC4W53FU	IC	1	C0JBAR000226
IC4001	C0FBBK000023	IC	1	
IC4002	NJM3404AV	IC	1	C0ABBA000076
IC4003	TK17030MTL	IC	1	C0ABBA000098
IC4004	C0ABBA000107	IC	1	
IC4051	LM4863MT	IC	1	
IC4052	TK17040MTL	IC	1	C0ABBA000099
IC5001	AN8708FHK	IC	1	
IC5002	IMD16AT108	IC	1	B1GKCFEL0001
IC6001	MN101C439BG	IC	1	
IC6002	XC61CN2702NR	IC	1	C0EBE0000124
IC6003	RCDRS-52	IC	1	B3RZB0000004
IC6004	C0ZBZ0000506	IC	1	
IC6005	S817A50ANBT2	IC	1	C0CBADB00018
IC6006	S817A33ANBT2	IC	1	C0CBABB00037
IC6201	MN102H60GFA	IC	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
IC6301	PST596JNR	IC	1	C0EBE0000070
IC6302	RFKFPV450080	IC	1	
IC6303	C3EBEC000024	IC	1	
IC6501	C1DB00000582	IC	1	
IC7001	MN103S13BGA	IC	1	
IC8001	AN2546FH-A	IC	1	
IC8002	C1AB00001458	IC	1	
IC8201	MN5814	IC	1	
IC8202	TC7W14FU	IC	1	
IC8401	C3EBDC000024	IC	1	
IC8403	TA75W558FU	IC	1	
IC8602	NJM2904V	IC	1	C0ABBA000084
IC8801	AN78L05M	IC	1	
IC8802	TK71533SCL	IC	1	C0DBCGB00001
J1401	VJJ0605	DC INLET	1	K2EC3B000001
J1402	VEK8922	BATTERY TERMINAL	1	K1FA104E0005
J3201	K2HC104B0016	JACK(VIDEO)	1	
J4001	JFJ8100	JACK(AUDIO)	1	K2HC108B0001
J4002	VJJ0686	JACK(HEADPHONE)	1	K2HC105B0009
K3071	ERJ3GEY0R00	1/16W 0	1	
K5299	VMC1467	EARTH ANGLE	1	
K6301	ERJ3GEY0R00	1/16W 0	1	
L1001	VLQ0914M2R0T	COIL	1	G1C2R0M00001
L1002	VLQ0914M150T	COIL	1	G1C150M00009
L1003	VLQ0914M4R3T	COIL	1	G1C4R3M00001
L1004,05	G1C4R7MA0031	COIL	2	
L1006	VLQ0914M150T	COIL	1	G1C150M00009
L1007	G1C4R7MA0031	COIL	1	
L1008,09	VLQ0914M150T	COIL	2	G1C150M00009
L1013,14	G1C4R7MA0031	COIL	2	
L1101-03	VLQ0855K220	COIL	3	
L1111	G1C4R7MA0031	COIL	1	
L1401	VLQ0849	COIL	1	G0B200H00005
L1402	VLQ0914M4R3T	COIL	1	G1C4R3M00001
L2001-03	VLQ0855K100T	COIL	3	G1C100K00020
L2501	VLQ0855K220	COIL	1	
L2502,03	VLQ0855K100T	COIL	2	G1C100K00020
L2504	VLQ0855K220	COIL	1	
L2505,06	VLQ0855K100T	COIL	2	G1C100K00020
L3081	VLQ0855K100T	COIL	1	G1C100K00020
L3201	VLQ0855K220	COIL	1	
L3204	VLQ0855K220	COIL	1	
L4001	VLP0157	COIL	1	J0JCC0000107
L4002	VLQ0855K220	COIL	1	
L4004	EXC3BB601H	COIL	1	
L5001-03	VLQ0855K100T	COIL	3	G1C100K00020
L6201	VLQ0855K100T	COIL	1	G1C100K00020
L6501,02	VLQ0855K220	COIL	2	
L7001,02	VLQ0855K100T	COIL	2	G1C100K00020
L8001	VLQ0426J330	COIL	1	G1C330J00005
L8030	VLQ0426J120	COIL	1	G1C120J00005

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
L8201	VLQ0910K100T	COIL	1	G1C100KA0019
L8205	VLQ0910K100T	COIL	1	G1C100KA0019
L8602	VLQ0426J2R2	COIL	1	G1C2R2J00008
L8603	VLQ0910K100T	COIL	1	G1C100KA0019
L8801-04	VLQ0910K100T	COIL	4	G1C100KA0019
LB1102-11	EXC3BB601H	COIL	10	
LB1112	VLP0155-T	CHIPBEAD	1	J0JCC0000119
LB3001	ERJ3GEYJ101	1/16W 100	1	D0GB101JA002
LB3201,02	EXC3BB102H	COIL	2	
LB3203	EXC3BB601H	COIL	1	
LB4001-04	VLQ0865M220	COIL	4	G1C220M00026
LB4005-07	VLP0155-T	CHIPBEAD	3	J0JCC0000119
LB4008,09	VLQ0865M220	COIL	2	G1C220M00026
LB4051	VLP0155-T	CHIPBEAD	1	J0JCC0000119
LB5001,02	VLP0323A601R	COIL	2	J0JCC0000062
LB5004	VLP0323A601R	COIL	1	J0JCC0000062
LB5005	VLP0155-T	CHIPBEAD	1	J0JCC0000119
LB5007	VLP0323A601R	COIL	1	J0JCC0000062
LB5008	JALBK2HS470T	FERRITE CORE	1	G1CYYYZ00003
LB5009	ERJ3GEYJ561	1/16W 560	1	
LB5010,11	VLP0323A601R	COIL	2	J0JCC0000062
LB5012	ERJ3GEYJ561	1/16W 560	1	
LB5013	VLP0323A601R	COIL	1	J0JCC0000062
LB5015,16	VLP0323A601R	COIL	2	J0JCC0000062
LB6201	ERJ3GEY0R00	1/16W 0	1	
LB6501	VLP0155-T	CHIPBEAD	1	J0JCC0000119
LB6503	ERJ3GEYJ101	1/16W 100	1	D0GB101JA002
LB6504	VLP0155-T	CHIPBEAD	1	J0JCC0000119
LB6505	ERJ3GEYJ101	1/16W 100	1	D0GB101JA002
LB6506	VLP0155-T	CHIPBEAD	1	J0JCC0000119
LB6507-09	ERJ3GEYJ101	1/16W 100	3	D0GB101JA002
LB6510	VLP0155-T	CHIPBEAD	1	J0JCC0000119
LB8202-04	EXC3BB601H	COIL	3	
PC1	RPK1577	PACKING CASE	1	
PC2	RPQF0227	ACCESSORY CASE	1	
PC3	RPQ1181	PROTECTION BAG(ASS'Y)	1	
PCB1	REP3167C-M	MAIN/CHARGE-BATT.P.C.B.	1	(RTL)
PCB2	REP3168B-S	LCD DRIVE P.C.B.	1	(RTL)
PR1401,02	VSF0233F31	FUSE,3.15A	2	K5H312300002 ⚠
PR1403,04	K5H2023A0001	FUSE,2A	2	⚠
PS6201	VJS4047A010	CONNECTOR(10P)	1	
Q1001-04	2SA2012	TRANSISTOR	4	
Q1006	CPH3106	TRANSISTOR	1	
Q1008-11	2SK1958-T1	TRANSISTOR	4	B1CFHA000001
Q1101	2SD1624-STTD	TRANSISTOR	1	B1ABPF000001
Q1401,02	2SK1958-T1	TRANSISTOR	2	B1CFHA000001
Q3202	2SB1218A-TX	TRANSISTOR	1	2SB1218A0L
Q3203	2SD1328QRS	TRANSISTOR	1	

2022	2023	2024	2025	2026
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Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
Q3204	2SD1819A	TRANSISTOR	1	2SD1819AW
Q4001-04	2SD1328QRS	TRANSISTOR	4	
Q5001,02	CPH3106	TRANSISTOR	2	
Q6003	2SB710AQRS	TRANSISTOR	1	
Q8001	2SD2216STX	TRANSISTOR	1	2SD22160SL
Q8201,02	2SD2216STX	TRANSISTOR	2	2SD22160SL
Q8401	2SB1462STX	TRANSISTOR	1	2SB14620SL
Q8402	2SD2216STX	TRANSISTOR	1	2SD22160SL
Q8406	XP4601-TX	TRANSISTOR	1	XP0460100L
QR1007	UN5214-TX	TRANSISTOR	1	UNR521400L
QR1101	UN5214-TX	TRANSISTOR	1	UNR521400L
QR1102	IMD16AT108	TRANSISTOR	1	B1GKCFEL0001
QR1401	UN511V	TRANSISTOR	1	
QR1404	UN5214-TX	TRANSISTOR	1	UNR521400L
QR3201	UN5214-TX	TRANSISTOR	1	UNR521400L
QR3202	DTA114YUA106	TRANSISTOR	1	B1GDCFJN0011
QR3203	UN5214-TX	TRANSISTOR	1	UNR521400L
QR4001	DTA114YUA106	TRANSISTOR	1	B1GDCFJN0011
QR4002	UN5214-TX	TRANSISTOR	1	UNR521400L
QR4003	DTA114YUA106	TRANSISTOR	1	B1GDCFJN0011
QR4004,05	FMG2T148	TRANSISTOR	2	B1GFCFNN0003
QR4051	FMG2T148	TRANSISTOR	1	B1GFCFNN0003
QR6001	DTA114YUA106	TRANSISTOR	1	B1GDCFJN0011
QR6002,03	FMG2T148	TRANSISTOR	2	B1GFCFNN0003
QR6006	DTA114YUA106	TRANSISTOR	1	B1GDCFJN0011
QR6301	UN5214-TX	TRANSISTOR	1	UNR521400L
QR8401	UN9212	TRANSISTOR	1	UNR9212
QR8901	UN9212	TRANSISTOR	1	UNR9212
R1001	ERJ3GEYJ823	1/16W 82K	1	
R1002	ERJ3GEYJ103	1/16W 10K	1	
R1003	ERJ3GEYJ683	1/16W 68K	1	
R1004	ERJ3GEYJ103	1/16W 10K	1	
R1005	ERJ3GEYJ123	1/16W 12K	1	
R1006	ERJ3GEYJ563	1/16W 56K	1	
R1007	ERJ3GEYJ823	1/16W 82K	1	
R1008	ERJ3GEYJ103	1/16W 10K	1	
R1009	ERJ3GEYJ823	1/16W 82K	1	
R1010	ERJ3GEYJ103	1/16W 10K	1	
R1011	ERJ3GEYJ470	1/16W 47	1	
R1012	ERJ3GEYJ123	1/16W 12K	1	
R1013	ERJ3GEYJ563	1/16W 56K	1	
R1014	ERJ3GEYJ103	1/16W 10K	1	
R1015	ERJ3GEYJ333V	1/16W 33K	1	D0GB333JA002
R1016	ERJ3GEYJ183	1/16W 18K	1	
R1018	ERJ3GEYJ822	1/16W 8.2K	1	
R1019	ERJ3GEYJ472	1/16W 4.7K	1	
R1020	ERJ3GEYJ272	1/16W 2.7K	1	
R1021	ERJ3GEYJ822	1/16W 8.2K	1	
R1022	ERJ3GEYJ123	1/16W 12K	1	
R1023	ERJ3GEYJ333V	1/16W 33K	1	D0GB333JA002
R1024,25	ERJ3GEYJ101	1/16W 100	2	D0GB101JA002
R1026	ERJ3GEYJ470	1/16W 47	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R1027	ERJ3RBD182	1/16W 1.8K	1	
R1028	ERJ3RBD561	1/16W 560	1	
R1029	ERJ3RBD123	1/16W 12K	1	
R1030	ERJ3GEY0R00	1/16W 0	1	
R1032	ERJ3RBD392	1/16W 3.9K	1	
R1033	ERJ3RBD471	1/16W 470	1	
R1034	ERJ3RBD332	1/16W 3.3K	1	
R1035	ERJ3RBD391	1/16W 390	1	ERJ3RBD391V
R1037	ERJ3RBD392	1/16W 3.9K	1	
R1038	ERJ3RBD391	1/16W 390	1	ERJ3RBD391V
R1039	ERJ3RBD152	1/16W 1.5K	1	
R1040	ERJ3RBD221	1/16W 220	1	
R1041	ERJ3GEY0R00	1/16W 0	1	
R1060	ERJ3GEYJ151	1/16W 150	1	
R1061	ERJ3GEYJ822	1/16W 8.2K	1	
R1063	ERJ3GEYJ123	1/16W 12K	1	
R1064	ERJ3GEYJ333V	1/16W 33K	1	D0GB333JA002
R1072	ERJ3RBD182	1/16W 1.8K	1	
R1073	ERJ3GEYJ221	1/16W 220	1	
R1074	ERJ3RBD103	1/16W 10K	1	
R1075	ERJ3GEYJ103	1/16W 10K	1	
R1091	ERJ3RBD101	1/16W 100	1	ERJ3RBD101V
R1092	ERJ3RBD152	1/16W 1.5K	1	
R1093	ERJ3RBD221	1/16W 220	1	
R1094	ERJ3RBD392	1/16W 3.9K	1	
R1096	ERJ3GEYJ102V	1/16W 1K	1	ERJ3GEYJ102Z
R1097	ERJ3GEYJ103	1/16W 10K	1	
R1101	ERJ3GEYJ103	1/16W 10K	1	
R1102	JAR0816P123D	1/16W 12K	1	D0HB123ZA002
R1103	JAR0816P122D	1/16W 1.2K	1	D0HB122ZA002
R1104	ERJ3RBD332	1/16W 3.3K	1	
R1105	ERJ3GEY0R00	1/16W 0	1	
R1106,07	ERJ3GEYJ220	1/16W 22	2	
R1108	ERJ3GEYJ1R0	1/16W 1	1	
R1109	ERJ3GEYJ103	1/16W 10K	1	
R1401,02	ERJ3GEYJ103	1/16W 10K	2	
R1403	ERJ3GEYJ332	1/16W 3.3K	1	
R1404	ERJ3GEYJ5R6	1/16W 5.6	1	
R1407	D1BFR068A007	0.068	1	
R1410	ERJ3GEYJ512	1/16W 5.1K	1	
R1411	ERJ3GEYJ333V	1/16W 33K	1	D0GB333JA002
R1412	ERJ3GEYJ224	1/16W 220K	1	
R1413	ERJ3GEYJ123	1/16W 12K	1	
R1414	ERJ3GEYJ392	1/16W 3.9K	1	
R1415	ERJ3GEYJ103	1/16W 10K	1	
R1416	JAR0816P472D	1/16W 4.7K	1	D0HB472ZA002
R1417	JAR0816P123D	1/16W 12K	1	D0HB123ZA002
R1419	ERJ3RBD562	1/16W 5.6K	1	
R1420	ERJ3RBD823	1/16W 82K	1	
R1421	ERJ3GEY0R00	1/16W 0	1	
R1425	ERJ3GEYJ103	1/16W 10K	1	
R1428	ERJ3GEYJ682	1/16W 6.8K	1	
R1430	ERJ3RBD471	1/16W 470	1	
R1431	ERJ3GEYJ394	1/16W 390K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R1432	ERJ3GEY0R00	1/16W 0	1	
R1433	ERJ3GEYJ103	1/16W 10K	1	
R1435	ERJ3GEYJ103	1/16W 10K	1	
R1436	ERJ3RBD562	1/16W 5.6K	1	
R1437	ERJ3GEY0R00	1/16W 0	1	
R1438	ERJ3GEYJ103	1/16W 10K	1	
R1439	ERJ3RBD152	1/16W 1.5K	1	
R1440	ERJ3RBD103	1/16W 10K	1	
R1441	ERJ3RBD562	1/16W 5.6K	1	
R1442	ERJ3GEYJ102V	1/16W 1K	1	ERJ3GEYJ102Z
R2001	ERJ3GEYJ473	1/16W 47K	1	
R2004-07	ERJ3GEYJ153	1/16W 15K	4	
R2010,11	ERJ3GEYJ153	1/16W 15K	2	
R2012	ERJ3GEYJ105	1/16W 1M	1	
R2013	ERJ3GEYJ562	1/16W 5.6K	1	
R2014	ERJ3RBD153	1/16W 15K	1	
R2015,16	ERJ3GEYJ333V	1/16W 33K	2	D0GB333JA002
R2017	ERJ3GEYJ123	1/16W 12K	1	
R2020	ERJ3GEYJ473	1/16W 47K	1	
R2021	JAR0816P123D	1/16W 12K	1	D0HB123ZA002
R2022	ERJ3GEYJ473	1/16W 47K	1	
R2023	ERJ3GEYJ103	1/16W 10K	1	
R2025	ERJ3GEYJ472	1/16W 4.7K	1	
R2026	ERJ3GEYJ221	1/16W 220	1	
R2027	ERJ3GEYJ103	1/16W 10K	1	
R2032,33	ERJ3GEYJ472	1/16W 4.7K	2	
R2034,35	ERJ3GEYJ563	1/16W 56K	2	
R2036	ERJ3GEYJ223	1/16W 22K	1	
R2037	ERJ3GEYJ183	1/16W 18K	1	
R2038	ERJ3GEYJ223	1/16W 22K	1	
R2039	ERJ3GEYJ473	1/16W 47K	1	
R2501	ERJ3GEYJ271	1/16W 270	1	
R2502,03	ERJ3GEYJ333V	1/16W 33K	2	D0GB333JA002
R2504,05	ERJ3GEYJ242	1/16W 2.4K	2	
R2506,07	ERJ3GEYJ183	1/16W 18K	2	
R2508-13	JRJR03EJ330	1/16W 33	6	D0GB330JA002
R2514	ERJ3GEYJ681V	1/16W 680	1	D0GB681JA002
R2515	ERJ3GEYJ183	1/16W 18K	1	
R2516	ERJ3GEYJ682	1/16W 6.8K	1	
R2517	ERJ3GEYJ101	1/16W 100	1	D0GB101JA002
R2518	ERJ3GEYJ153	1/16W 15K	1	
R2519	ERJ14YKR39	1/4W 0.39	1	
R2520	ERJ3GEYJ271	1/16W 270	1	
R2521,22	ERJ3GEYJ473	1/16W 47K	2	
R3001	ERJ3GEYJ220	1/16W 22	1	
R3002	ERJ3GEYJ472	1/16W 4.7K	1	
R3005	ERJ3GEYJ473	1/16W 47K	1	
R3071	ERJ3GEYJ103	1/16W 10K	1	
R3080	ERJ3RBD752	1/16W 7.5K	1	ERJ3RBD752V
R3081	ERJ3RBD272	1/16W 2.7K	1	
R3082	JAR0816P122D	1/16W 1.2K	1	D0HB122ZA002
R3083	ERJ3GEYJ151	1/16W 150	1	
R3084	ERJ3RBD752	1/16W 7.5K	1	ERJ3RBD752V
R3085	ERJ3GEYJ102V	1/16W 1K	1	ERJ3GEYJ102Z

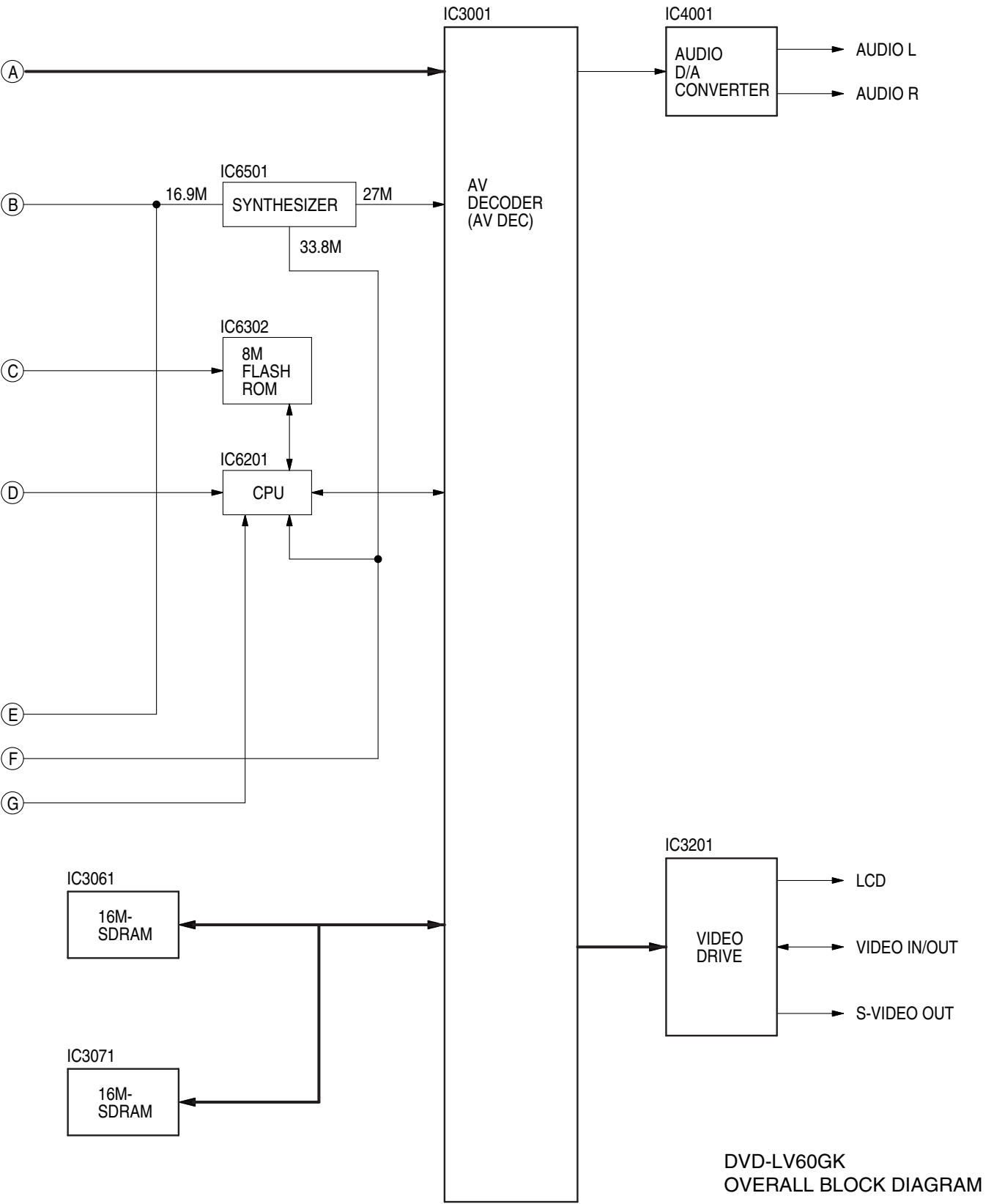
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R3086	ERJ3GEYJ561	1/16W 560	1	
R3089,90	ERJ3GEYF750	1/16W 75	2	
R3201,02	ERJ3GEYD680V	1/16W 68	2	
R3203	ERJ3GEYF750	1/16W 75	1	
R3206	ERJ3GEYJ104	1/16W 100K	1	
R3207,08	ERJ3GEYJ102V	1/16W 1K	2	ERJ3GEYJ102Z
R3209	ERJ3GEYJ222	1/16W 2.2K	1	
R3210	ERJ3GEYJ332	1/16W 3.3K	1	
R3211	ERJ3GEYJ682	1/16W 6.8K	1	
R3212	ERJ3GEYJ821	1/16W 820	1	
R3214	ERJ3GEYJ153	1/16W 15K	1	
R3215	ERJ3GEYJ101	1/16W 100	1	D0GB101JA002
R4001,02	JAR0816P223D	1/16W 22K	2	D0HB223ZA002
R4003,04	JAR0816P333D	1/16W 33K	2	D0HB333ZA002
R4005,06	JAR0816P123D	1/16W 12K	2	D0HB123ZA002
R4007,08	JAR0816P561D	1/16W 560	2	D0HB561ZA002
R4009,10	JAR0816P473D	1/16W 47K	2	D1BB47020002
R4011,12	JAR0816P561D	1/16W 560	2	D0HB561ZA002
R4013,14	ERJ3GEYJ102V	1/16W 1K	2	ERJ3GEYJ102Z
R4015,16	JAR0816P103D	1/16W 10K	2	D0HB103ZA002
R4017,18	JAR0816P122D	1/16W 1.2K	2	D0HB122ZA002
R4019,20	JAR0816P222D	1/16W 2.2K	2	D0HB222ZA002
R4021,22	ERJ14YJ270	1/4W 27	2	
R4023,24	ERJ3GEYJ101	1/16W 100	2	D0GB101JA002
R4025,26	JAR0816P472D	1/16W 4.7K	2	D0HB472ZA002
R4027	ERJ3GEYJ223	1/16W 22K	1	
R4028	ERJ3GEYJ102V	1/16W 1K	1	ERJ3GEYJ102Z
R4029	ERJ3GEYJ183	1/16W 18K	1	
R4030	ERJ3GEYJ103	1/16W 10K	1	
R4031	ERJ3GEYJ222	1/16W 2.2K	1	
R4032	ERJ3GEY0R00	1/16W 0	1	
R4033-35	ERJ3GEYJ471	1/16W 470	3	
R4036	ERJ3GEYJ473	1/16W 47K	1	
R4037-39	ERJ3GEY0R00	1/16W 0	3	
R4051,52	ERJ3GEYJ183	1/16W 18K	2	
R4053,54	ERJ3GEYJ473	1/16W 47K	2	
R4055	ERJ3GEYJ104	1/16W 100K	1	
R4056	ERJ3GEYJ473	1/16W 47K	1	
R4057	ERJ3GEYJ103	1/16W 10K	1	
R4101,02	JAR0816P123D	1/16W 12K	2	D0HB123ZA002
R5001	ERJ3GEYJ102V	1/16W 1K	1	ERJ3GEYJ102Z
R5003	ERJ3GEYJ102V	1/16W 1K	1	ERJ3GEYJ102Z
R5004	ERJ3GEYJ223	1/16W 22K	1	
R5005	ERJ3GEYJ822	1/16W 8.2K	1	
R5006	ERJ3GEYJ473	1/16W 47K	1	
R5007	ERJ3GEYJ822	1/16W 8.2K	1	
R5008	ERJ12YJ270	1/2W 27	1	
R5009	ERJ3GEYJ2R2V	1/16W 2.2K	1	D0GB2R2JA002
R5010	ERJ12YJ270	1/2W 27	1	
R5011	ERJ3GEYJ2R2V	1/16W 2.2K	1	D0GB2R2JA002
R5012	ERJ3GEYJ473	1/16W 47K	1	
R5013	JAR0816P123D	1/16W 12K	1	D0HB123ZA002
R5016	ERJ3GEYJ105	1/16W 1M	1	
R5017	ERJ3GEYJ223	1/16W 22K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R5018	ERJ3GEYJ333V	1/16W 33K	1	D0GB333JA002
R6003	ERJ3GEYJ394	1/16W 390K	1	
R6004	ERJ3GEYJ470	1/16W 47	1	
R6005	ERJ3GEYJ563	1/16W 56K	1	
R6007	ERJ3GEYJ473	1/16W 47K	1	
R6008	ERJ3RBD103	1/16W 10K	1	
R6009	JAR0816P333D	1/16W 33K	1	D0HB333ZA002
R6010	JAR0816P561D	1/16W 560	1	D0HB561ZA002
R6011	JAR0816P123D	1/16W 12K	1	D0HB123ZA002
R6012	ERJ3RBD103	1/16W 10K	1	
R6013	ERJ3RBD152	1/16W 1.5K	1	
R6014	ERJ3GEYJ221	1/16W 220	1	
R6015	ERJ3GEYJ101	1/16W 100	1	D0GB101JA002
R6016	ERJ3GEYJ103	1/16W 10K	1	
R6017	ERJ3GEYJ473	1/16W 47K	1	
R6018	ERJ3GEYJ103	1/16W 10K	1	
R6019	ERJ3GEYJ472	1/16W 4.7K	1	
R6022	ERJ3GEYJ102V	1/16W 1K	1	ERJ3GEYJ102Z
R6023	ERJ3RBD103	1/16W 10K	1	
R6024	ERJ3GEYJ472	1/16W 4.7K	1	
R6025	ERJ3GEYJ103	1/16W 10K	1	
R6026	ERJ3GEYJ104	1/16W 100K	1	
R6027	ERJ3GEYJ221	1/16W 220	1	
R6028	ERJ3GEYJ103	1/16W 10K	1	
R6029	ERJ3GEYJ332	1/16W 3.3K	1	
R6030	ERJ3GEYJ103	1/16W 10K	1	
R6031	ERJ3GEYJ122	1/16W 1.2K	1	
R6032	ERJ3GEYJ152	1/16W 1.5K	1	
R6033	ERJ3GEYJ222	1/16W 2.2K	1	
R6034	ERJ3GEYJ332	1/16W 3.3K	1	
R6037	VRT0139J103	THERMISTOR	1	D4CC11030005
R6038	ERJ3GEYJ473	1/16W 47K	1	
R6039	ERJ3GEYJ822	1/16W 8.2K	1	
R6040	ERJ3GEYJ103	1/16W 10K	1	
R6043	ERJ3GEY0R00	1/16W 0	1	
R6208	ERJ3GEYJ473	1/16W 47K	1	
R6209	ERJ3GEYJ102V	1/16W 1K	1	ERJ3GEYJ102Z
R6301	ERJ3GEYJ103	1/16W 10K	1	
R6302,03	ERJ3GEYJ472	1/16W 4.7K	2	
R6502	ERJ3RBD331	1/16W 330	1	
R6503	ERJ3GEYJ103	1/16W 10K	1	
R7001	ERJ3GEYJ102V	1/16W 1K	1	ERJ3GEYJ102Z
R7002	ERJ3GEYJ473	1/16W 47K	1	
R8001	ERJ3GEYJ222	1/16W 2.2K	1	
R8002	ERJ3GEYJ472	1/16W 4.7K	1	
R8006-08	ERJ3GEYJ101	1/16W 100	3	D0GB101JA002
R8009	ERJ3GEYJ105	1/16W 1M	1	
R8010	ERJ3GEYJ332	1/16W 3.3K	1	
R8011	ERJ3GEYJ103	1/16W 10K	1	
R8012,13	ERJ3GEYJ562	1/16W 5.6K	2	
R8014,15	ERJ3GEYJ682	1/16W 6.8K	2	
R8037	ERJ3GEYJ473	1/16W 47K	1	
R8038	ERJ3RBD272	1/16W 2.7K	1	
R8039	ERJ3RBD182	1/16W 1.8K	1	

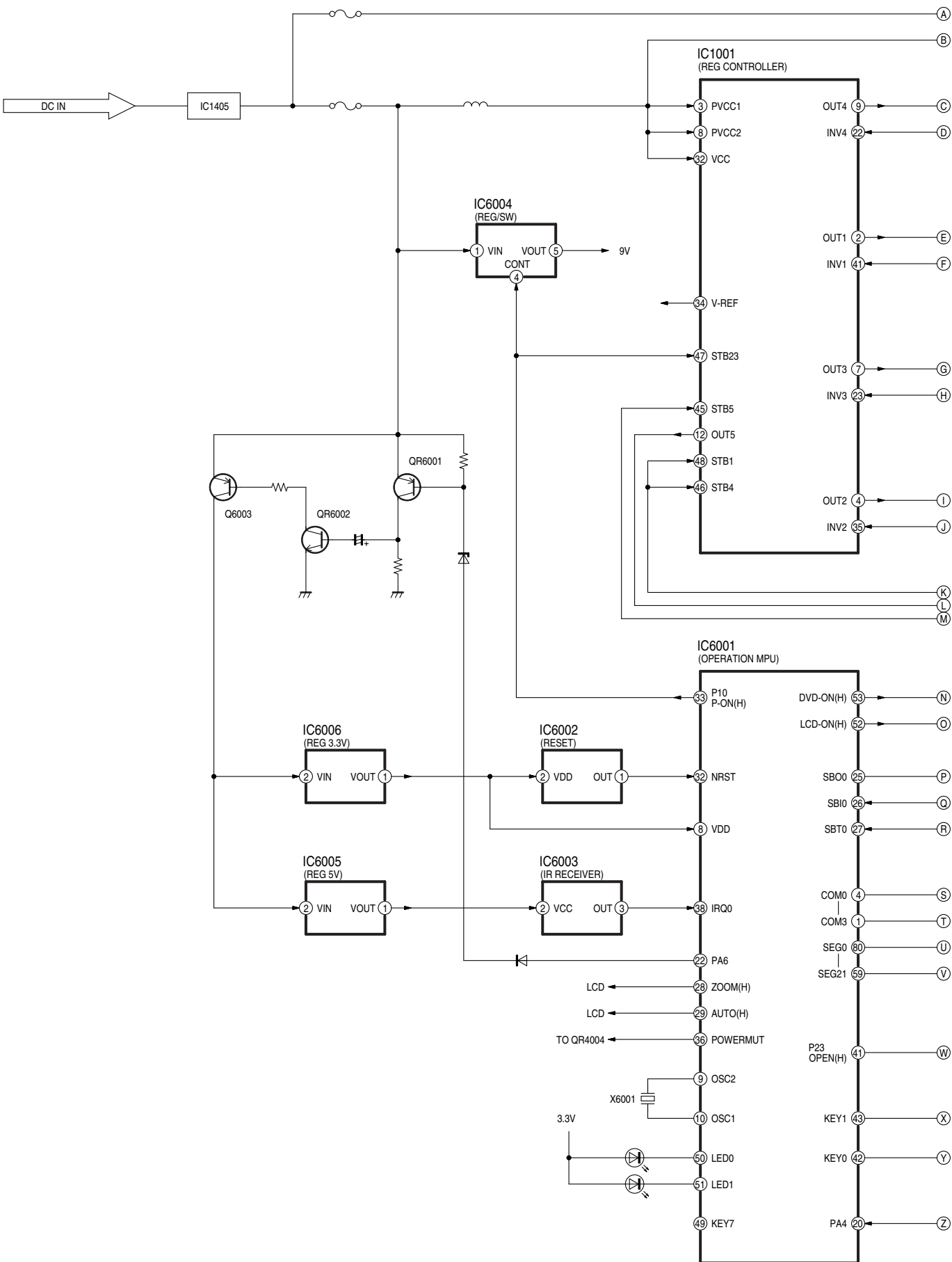
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R8040	ERJ3RBD102	1/16W 1K	1	
R8042	ERJ3GEYJ561	1/16W 560	1	
R8044	ERJ3GEYJ154	1/16W 150K	1	
R8045	ERJ3GEYJ561	1/16W 560	1	
R8057-59	ERJ3GEY0R00	1/16W 0	3	
R8205	ERJ3GEYJ102V	1/16W 1K	1	ERJ3GEYJ102Z
R8209,10	ERJ3GEYJ102V	1/16W 1K	2	ERJ3GEYJ102Z
R8211	ERJ3GEY0R00	1/16W 0	1	
R8212-14	ERJ3GEYJ102V	1/16W 1K	3	ERJ3GEYJ102Z
R8218	ERJ3GEYJ102V	1/16W 1K	1	ERJ3GEYJ102Z
R8219-22	ERJ3GEYJ101	1/16W 100	4	D0GB101JA002
R8224-26	ERJ3GEYJ472	1/16W 4.7K	3	
R8227	ERJ3GEYJ273V	1/16W 27K	1	D0GB273JA002
R8230,31	ERJ3RBD393	1/16W 39K	2	
R8232	ERJ3GEYJ823	1/16W 82K	1	
R8233	ERJ3RED184	1/16W 180K	1	
R8235	ERJ3GEYJ823	1/16W 82K	1	
R8236	ERJ3GEYJ332	1/16W 3.3K	1	
R8237	ERJ3GEYJ152	1/16W 1.5K	1	
R8238	ERJ3GEYJ103	1/16W 10K	1	
R8401	ERJ3GEYJ153	1/16W 15K	1	
R8402	ERJ3GEYJ184V	1/16W 180K	1	
R8403	ERJ3GEYJ473	1/16W 47K	1	
R8404	ERJ3GEYJ153	1/16W 15K	1	
R8405,06	ERJ3GEYJ563	1/16W 56K	2	
R8407	ERJ3GEYJ223	1/16W 22K	1	
R8408	ERJ3GEYJ103	1/16W 10K	1	
R8409	ERJ3GEYJ333V	1/16W 33K	1	D0GB333JA002
R8410	ERJ3GEYJ103	1/16W 10K	1	
R8411	ERJ3GEYJ472	1/16W 4.7K	1	
R8413	ERJ3GEYJ103	1/16W 10K	1	
R8425	ERJ3GEYJ470	1/16W 47	1	
R8428,29	ERJ3GEYJ123	1/16W 12K	2	
R8430	ERJ3GEYJ470	1/16W 47	1	
R8433	ERJ3GEY0R00	1/16W 0	1	
R8605	ERJ3GEYJ103	1/16W 10K	1	
R8606	ERJ3GEYJ105	1/16W 1M	1	
R8607	ERJ3GEYJ683	1/16W 68K	1	
R8608	ERJ3GEYJ103	1/16W 10K	1	
R8609	ERJ3GEYJ473	1/16W 47K	1	
R8610	ERJ3GEYJ683	1/16W 68K	1	
R8611	ERJ3GEYJ223	1/16W 22K	1	
R8612	ERJ3GEYJ103	1/16W 10K	1	
R8613	ERJ3GEYJ563	1/16W 56K	1	
R8614,15	ERJ3GEYJ103	1/16W 10K	2	
R8616	ERJ3GEYJ474	1/16W 470K	1	
R8901	ERJ3GEYJ153	1/16W 15K	1	
RA3008	EXBV4V103J	RESISTOR-RESISTOR	1	EXBV4V103JV
RA3011	EXBV4V473J	RESISTOR-RESISTOR	1	EXBV4V473JV
RA6003	EXBV8V473J	RESISTOR-RESISTOR	1	EXBV8V473JV
RA6201	EXBV4V103J	RESISTOR-RESISTOR	1	EXBV4V103JV
RA6202	EXBV4V473J	RESISTOR-RESISTOR	1	EXBV4V473JV
RA6203	EXBV4V472J	RESISTOR-RESISTOR	1	

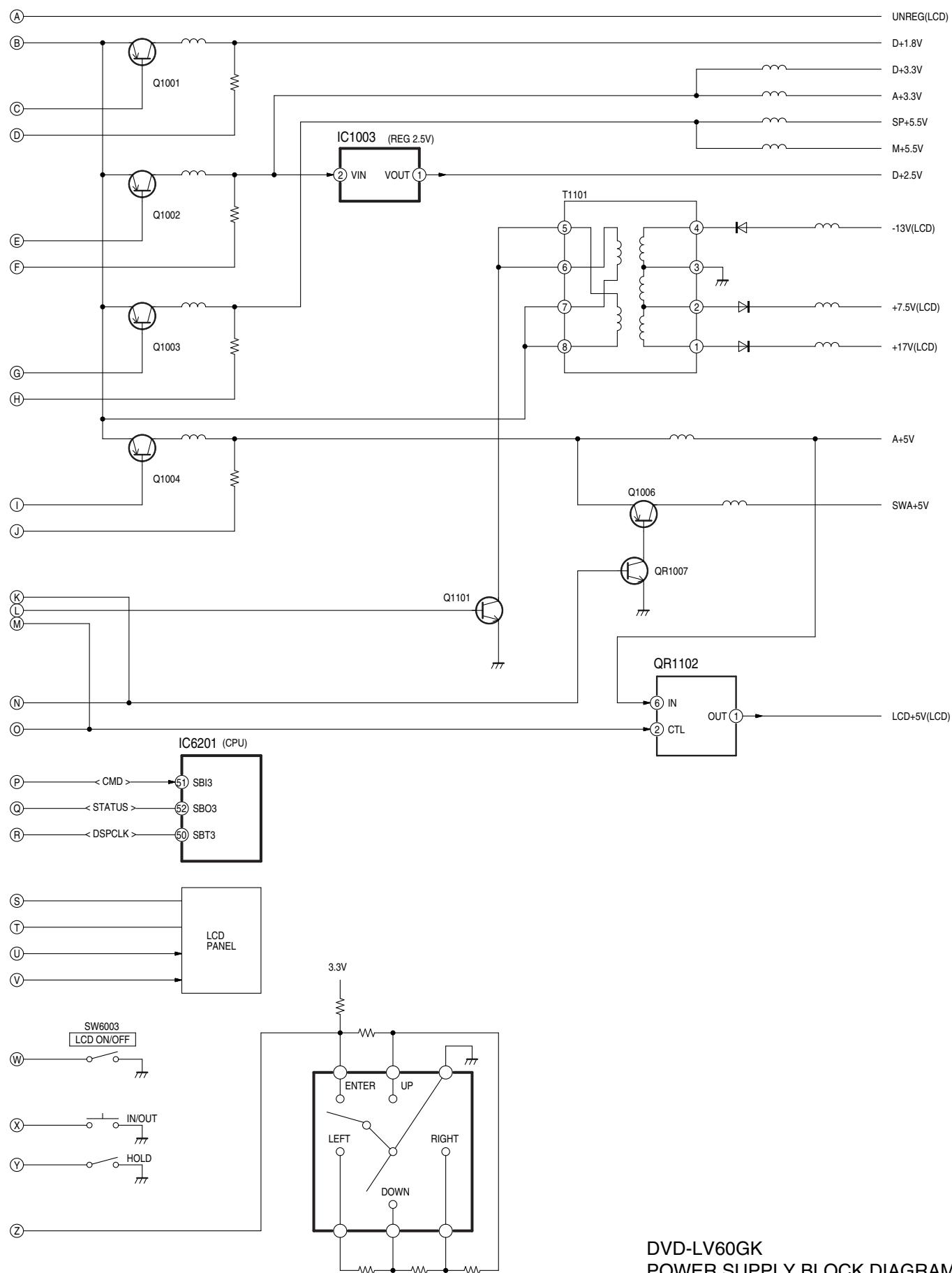
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
RA6204	EXBV4V103J	RESISTOR-RESISTOR	1	EXBV4V103JV
RA6205	EXBV8V473J	RESISTOR-RESISTOR	1	EXBV8V473JV
RA6206	EXBV4V473J	RESISTOR-RESISTOR	1	EXBV4V473JV
RA6207	EXBV4V103J	RESISTOR-RESISTOR	1	EXBV4V103JV
RA7001-03	EXBV8V473J	RESISTOR-RESISTOR	3	EXBV8V473JV
S6001	EVQPUL02K	SWITCH,AV IN/OUT	1	
SW5001,02	ESE11MV9T	SWITCH	2	
SW6001	VSS0534	SWITCH,HOLD	1	K0D112B00071
SW6002	K0C115A00002	SWITCH,SELECT	1	
SW6003	ESE11MV9T	SWITCH,LCD ON/OFF	1	
T1101	G5ZZ00000048	TRANSFORMER	1	
VR3022	VRV0293B102T	V.R.(Y-ADJ)	1	D3DA3102A001
VR4001	EVUTUFB11C54	V.R.(VOLUME)	1	
W8003	ERJ3GEY0R00	1/16W 0	1	
W8051-53	ERJ3GEY0R00	1/16W 0	3	
W8202,03	ERJ3GEY0R00	1/16W 0	2	
W8205	ERJ3GEY0R00	1/16W 0	1	
W8209	ERJ3GEY0R00	1/16W 0	1	
W8215,16	ERJ3GEY0R00	1/16W 0	2	
W8404	ERJ3GEY0R00	1/16W 0	1	
X6001	RSXY8M00M07T	CERAMIC OSCILLATOR	1	H2D800400005
X6501	VSX1044	CRYSTAL OSCILLATOR	1	H0J368500003
X8001	VSX0672	CRYSTAL OSCILLATOR	1	H0J443400006

H010800000TK/TH

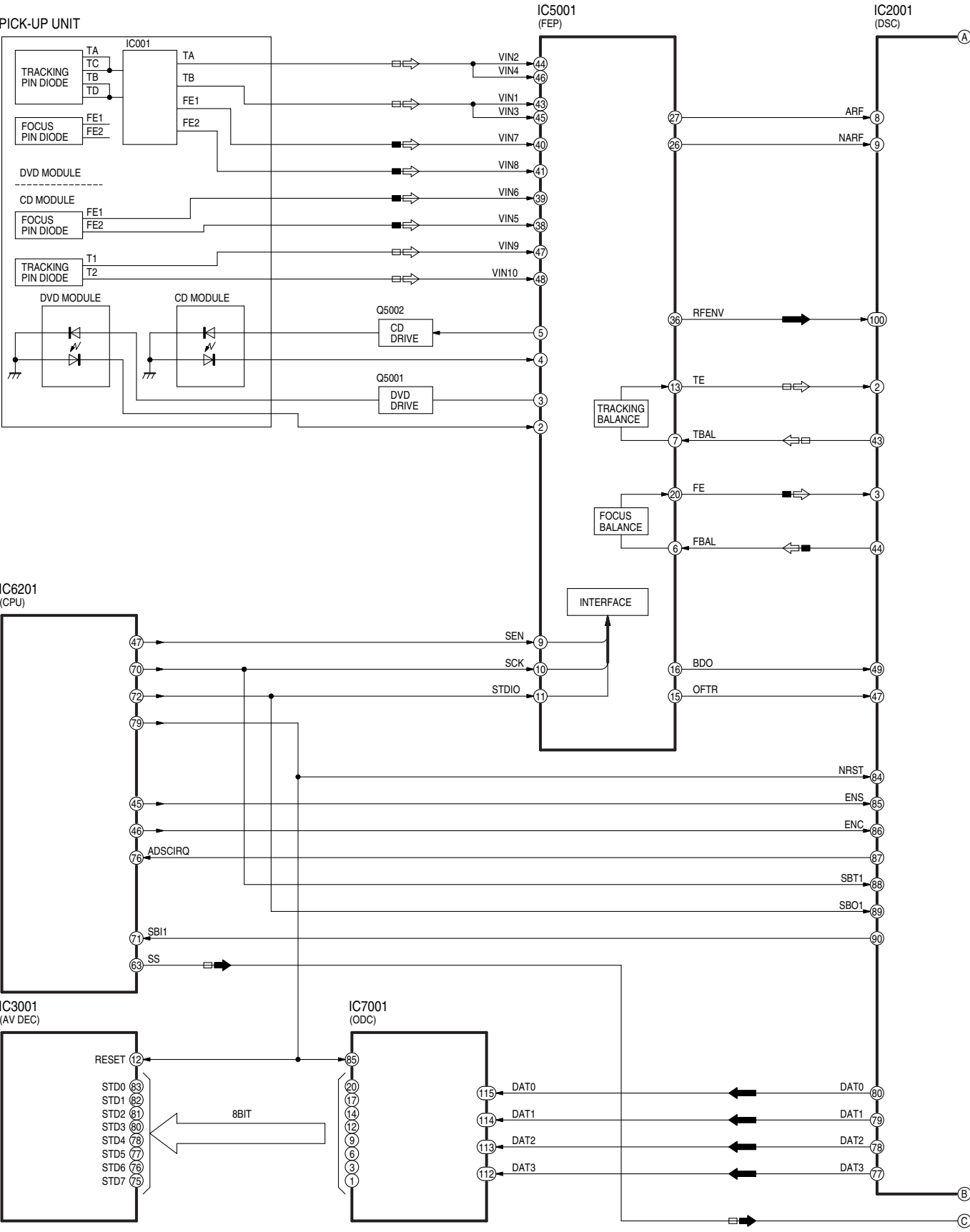


DVD-LV60GK
OVERALL BLOCK DIAGRAM





DVD-LV60GK
POWER SUPPLY BLOCK DIAGRAM



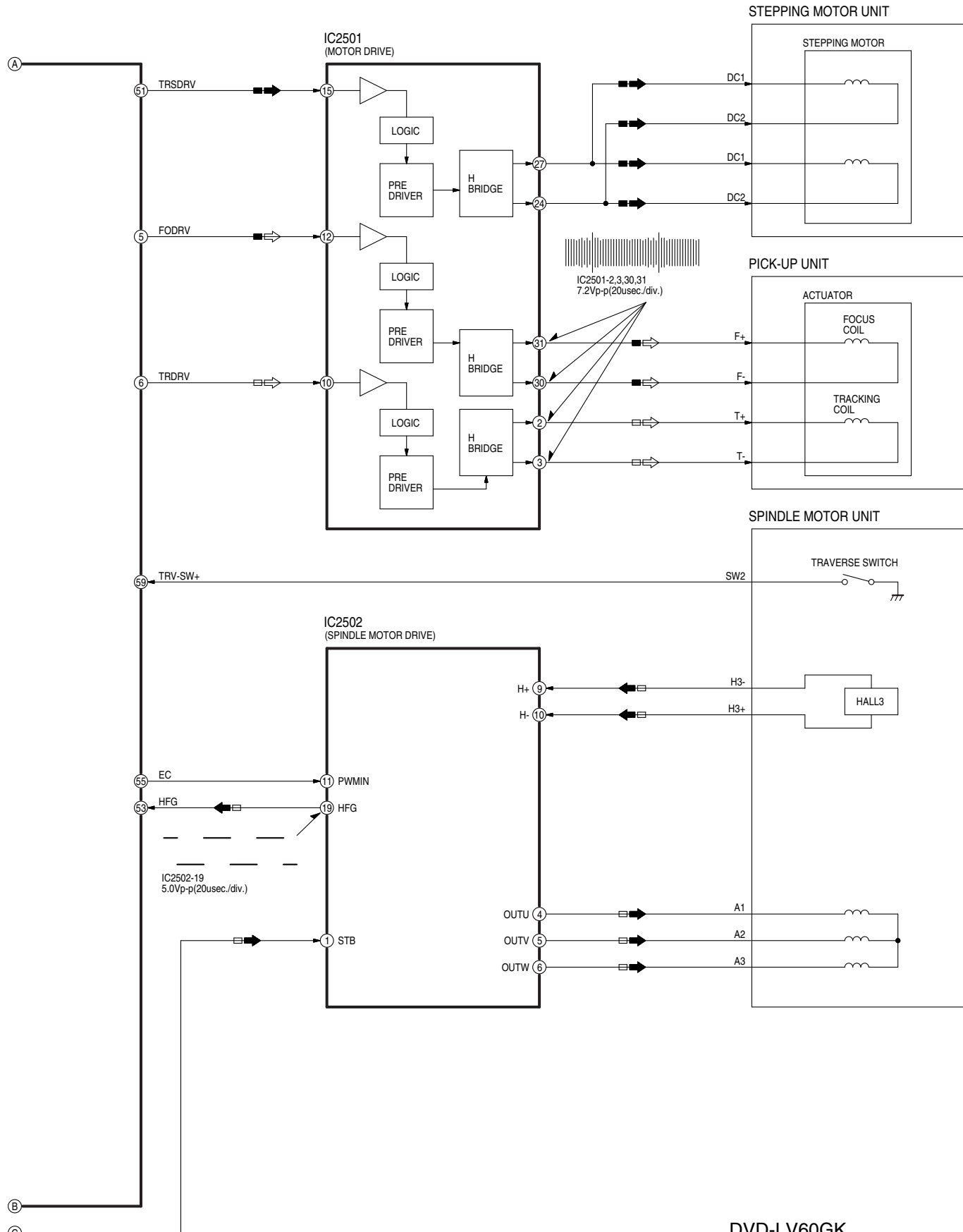
← :RF SIGNAL

← □ :SPINDLE MOTOR DRIVE SIGNAL

← □ :TRACKING ERROR SIGNAL

← ■ :STEPPING MOTOR DRIVE SIGNAL

← ■ :FOCUS ERROR SIGNAL

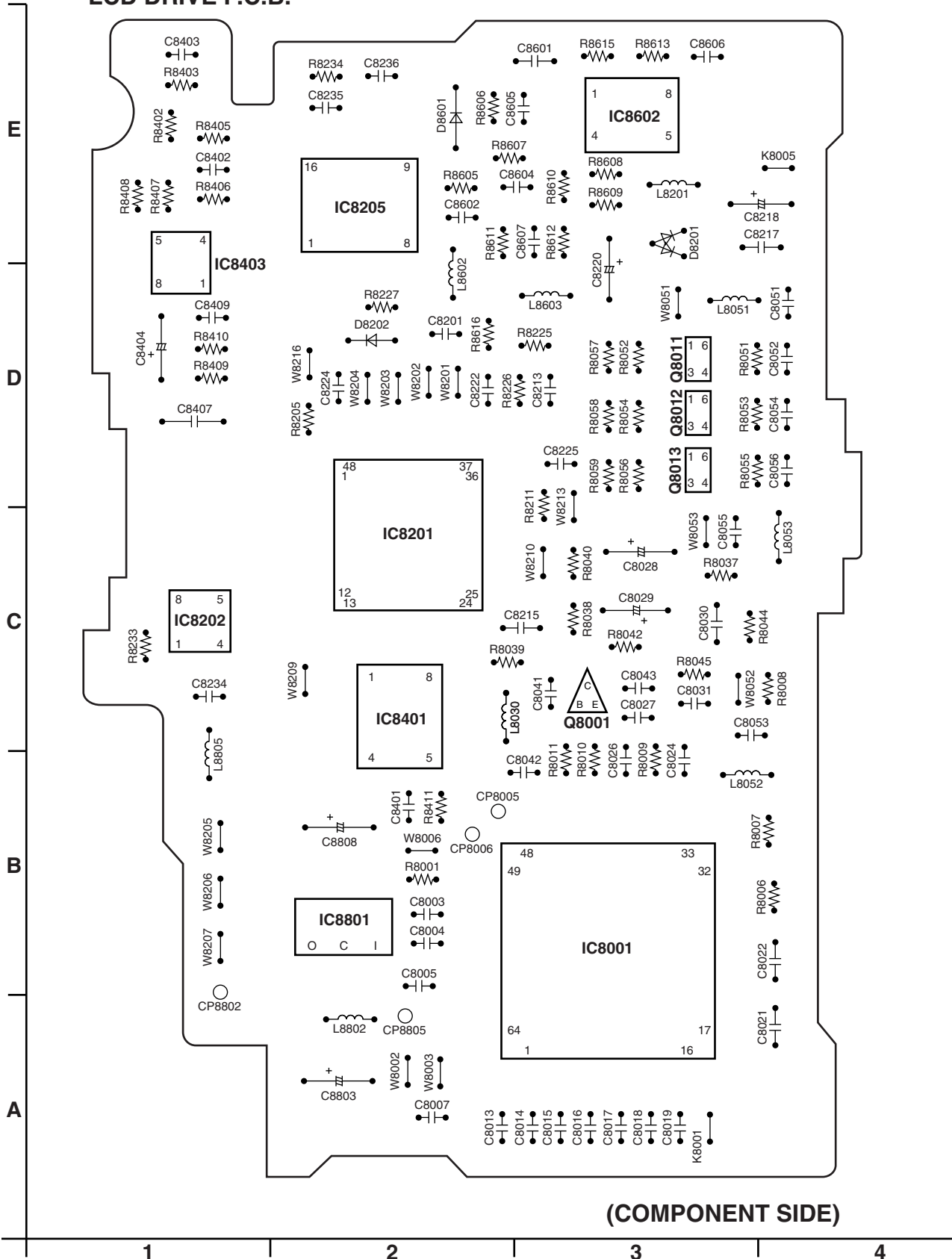


DVD-LV60GK
SERVO BLOCK DIAGRAM

Ref No.	IC1401																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	0	0	0	0	0	1.2	0	3.7	3.7	0	0	0	0	0	0	0	9.6	9.5	0
PLAY	0	0	0	0	0	0	1.2	0	4.0	4.0	0	0	0	0	0	0	0	9.6	9.5	0
Ref No.	IC1402									IC1405										
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8			
STOP	9.6	9.6	9.6	9.6	4.2	4.2	4.2	4.2		9.6	9.6	9.6	0	9.6	9.6	9.6	9.6			
PLAY	9.6	9.6	9.6	9.6	4.2	4.2	4.2	4.2		9.6	9.6	9.6	0	9.6	9.6	9.6	9.6			
Ref No.	Q1401				Q1402				QR1401				QR1404							
MODE	S	D	G		S	D	G		O	G	I		E	C	B					
STOP	0	0	0		0	1.3	0		9.6	9.6	0		0	0	0					
PLAY	0	0	0		0	1.3	0		9.6	9.6	0		0	0	0					

Ref No.	IC8001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	2.8	2.2	2.6	2.0	2.0	5.0	2.0	2.3	0	0	3.4	3.4	3.4	2.0	2.0	2.0	0	0	2.5	2.5
PLAY	2.8	2.9	2.9	2.0	2.0	5.0	2.0	2.3	0	0	3.4	3.4	3.4	2.0	2.0	2.0	0	0.7	2.5	2.5
Ref No.	IC8001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	2.5	2.5	0	2.5	7.3	2.5	2.5	4.0	3.3	2.1	3.2	3.0	1.1	0.5	0	1.6	0	0	4.8	0
PLAY	2.5	2.5	0	2.5	7.3	2.5	2.5	4.0	3.3	2.1	3.2	3.0	2.0	0.5	3.2	1.6	0	1.6	4.8	3.0
Ref No.	IC8001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	0	2.7	1.8	5.0	1.2	3.4	3.3	3.2	3.0	1.8	1.5	3.0	2.3	2.4	2.7	4.2	3.0	5.0	0	4.7
PLAY	0	2.7	1.8	5.0	1.7	3.8	3.3	3.2	3.0	1.8	2.3	3.0	2.3	2.4	2.7	4.2	3.0	5.0	0	4.7
Ref No.	IC8001																			
MODE	61	62	63	64																
STOP	2.4	2.1	2.0	2.9																
PLAY	2.4	2.1	2.0	2.9																
Ref No.	IC8201																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0.5	3.0	1.4	0.6	3.2	3.0	3.2	0	3.3	1.3	1.4	0	2.0	1.6	0	0.5	0.1	0.1	0.1	1.6
PLAY	0.5	3.0	1.0	2.9	3.2	3.0	3.2	0.7	3.3	1.0	1.0	0	2.3	1.6	0	0.5	0.1	0.1	0.1	1.6
Ref No.	IC8201																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	0.4	0	0	1.6	1.4	0	1.4	2.3	1.4	2.3	1.3	3.3	1.6	0	3.3	1.6	1.6	0	3.3	0
PLAY	0.4	0	0	1.6	1.4	0	1.4	2.3	1.4	2.3	1.3	3.3	1.6	0	3.3	1.6	1.6	0	3.3	0
Ref No.	IC8201																			
MODE	41	42	43	44	45	46	47	48												
STOP	0	1.4	3.3	3.3	1.4	0	3.0	0												
PLAY	0	1.4	3.3	3.3	1.4	0	3.0	0												
Ref No.	IC8202								IC8401											
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8			
STOP	0.5	0	0.1	0	3.3	2.3	3.0	3.3		0	0	0	0	3.2	3.2	0	3.3			
PLAY	0.5	0	0.1	0	3.3	2.3	3.0	3.3		0	0	0	0	3.2	3.2	0	3.3			
Ref No.	IC8403								IC8602											
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8			
STOP	2.6	2.5	2.6	12.6	1.5	1.5	1.5	7.3		0.7	1.5	1.5	0	1.6	1.5	9.6	17.5			
PLAY	2.6	1.3	2.4	12.6	1.5	1.5	1.5	7.3		0.7	1.5	1.5	0	1.6	1.5	9.6	17.5			
Ref No.	IC8801			IC8802																
MODE	O	G	I		O	G	I													
STOP	5.0	0	7.3		3.3	0	4.8													
PLAY	5.0	0	7.3		3.3	0	4.8													

LCD DRIVE P.C.B.



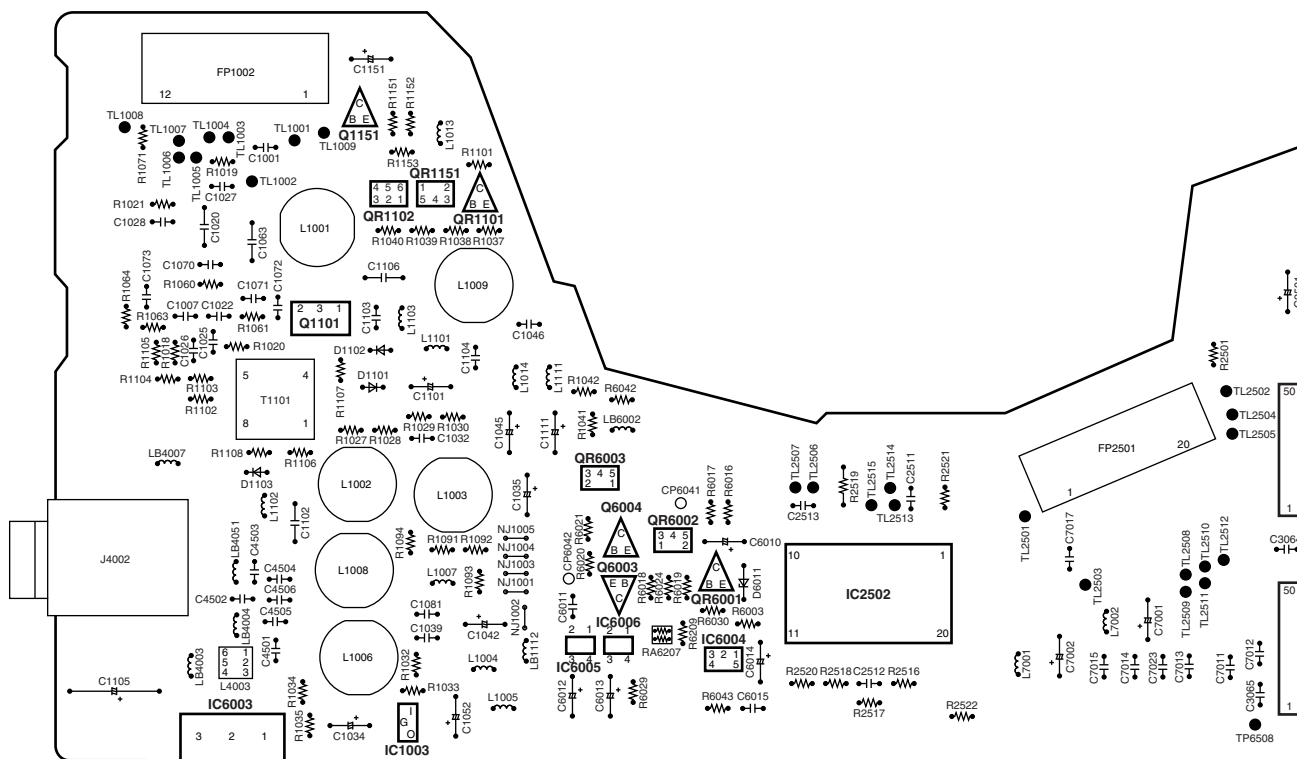
(COMPONENT SIDE)

D

C

B

A



(COMPONENT SIDE)

6

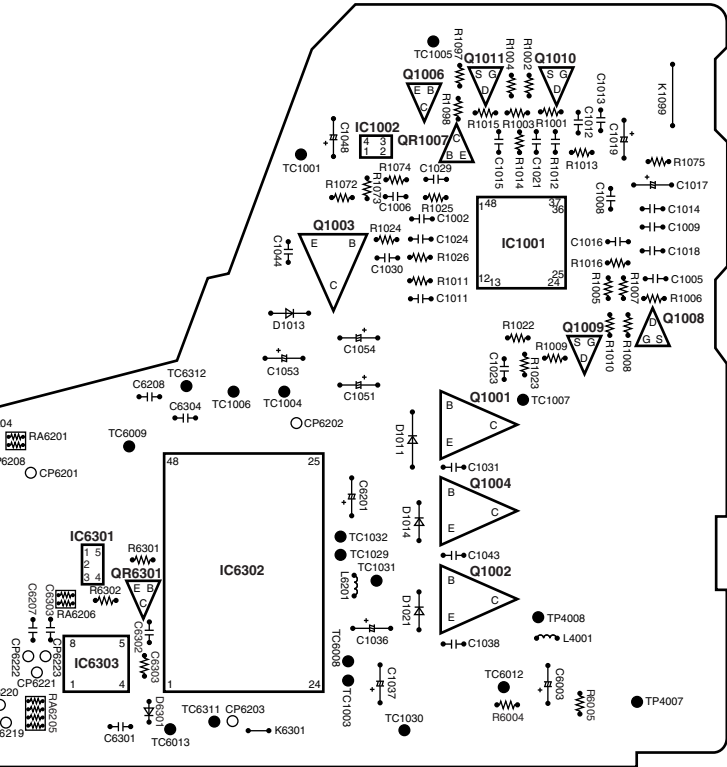
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MAIN P.C.B.																									
Transistors			IC1003		A-2	C	TC1020		E-2	F	TC6017		E-2	F	TL6022		E-6	C	TP6501		B-6	C			
			Q1001	B-6	F	C-2	F	TC1021	E-2	F	TC6018	E-2	F	TL6023	E-6	C	TP6503	B-6	C						
Q1002	A-6	F	IC2501	B-3	F	TC1022	E-2	F	TC6201	E-1	F	TL6024	E-6	C	TP6504	B-6	C								
Q1003	B-5	F	IC2502	A-3	C	TC1023	E-2	F	TC6311	A-5	F	TL6025	E-6	C	TP6505	B-5	C								
Q1004	A-6	F	IC3001	B-2	F	TC1024	E-2	F	TC6312	B-5	F	TL6026	E-6	C	TP6508	A-5	C								
Q1006	C-6	F	IC3061	A-5	C	TC1025	E-2	F	TL1001	C-2	C	TL6027	E-6	C	TP6509	B-3	F								
Q1008	B-6	F	IC3071	B-5	C	TC1026	E-2	F	TL1002	C-1	C	TL6028	E-6	C	TP6510	C-6	C								
Q1009	B-6	F	IC3201	C-1	F	TC1027	E-2	F	TL1003	C-1	C	TL6029	E-6	C	Adjustment										
Q1010	C-6	F	IC3202	E-1	F	TC1028	E-2	F	TL1004	C-1	C	TL6030	E-6	C											
Q1011	C-6	F	IC4001	C-6	C	TC1029	A-6	F	TL1005	C-1	C	TL6031	E-6	C	VR4001		B-6	C							
Q1101	B-2	C	IC4002	C-6	C	TC1030	A-6	F	TL1006	C-1	C	TL6032	E-6	C			VR3022		A-6	C					
Q1151	C-2	C	IC4003	B-1	F	TC1031	A-6	F	TL1007	C-1	C	TL6033	E-6	C	Connector										
Q3202	B-6	C	IC4004	C-6	C	TC1032	A-6	F	TL1008	C-1	C	TL6034	E-6	C											
Q3203	B-6	C	IC4051	E-6	C	TC2001	C-2	F	TL2004	D-6	C	TL6035	E-6	C	FP1101		E-6	C							
Q3204	B-6	C	IC4502	C-6	C	TC2004	C-2	F	TL2501	A-4	C	TL6036	E-6	C			FP8001		E-6	C					
Q4001	D-6	C	IC5001	D-2	F	TC2005	C-2	F	TL2502	B-4	C	TL6037	E-6	C	FP1002				C-1	C					
Q4002	C-6	C	IC5002	D-6	C	TC2006	C-2	F	TL2503	A-4	C	TL6038	E-6	C			FP2501		B-4	C					
Q4003	B-6	C	IC6001	D-6	C	TC2007	C-2	F	TL2504	B-4	C	TL6039	E-6	C	FP5001				C-5	C					
Q4004	B-6	C	IC6002	D-6	C	TC2008	C-2	F	TL2505	B-4	C	TL6040	E-6	C			J1151		E-6	C					
Q5001	D-2	F	IC6003	A-1	C	TC2009	C-2	F	TL2506	B-3	C	TL6041	E-6	C	J3201				D-6	C					
Q5002	D-2	F	IC6004	A-3	C	TC2010	C-1	F	TL2507	B-3	C	TL6042	E-6	C			J4001		D-6	C					
Q6003	A-3	C	IC6005	A-2	C	TC2011	C-2	F	TL2508	A-4	C	TL6043	E-6	C	J5002				A-1	C					
Q6004	A-3	C	IC6006	A-3	C	TC2012	B-2	F	TL2509	A-4	C	TL6044	E-6	C			PS6201		E-6	C					
Transistor & Resistor			IC6201	A-4	F	TC2013	C-2	F	TL2510	A-4	C	TP2516	A-4	F	C ...COMPONENT SIDE F ...FOIL SIDE										
			IC6301	A-5	F	TC2014	C-2	F	TL2511	A-4	C	TP3201	C-6	C											
QR11007	C-6	F	IC6302	A-5	F	TC2015	B-2	F	TL2512	A-4	C	TP3202	C-1	F											
QR11101	B-2	C	IC6303	A-5	F	TC2016	C-1	F	TL2513	B-3	C	TP3203	C-1	F											
QR11102	B-2	C	IC6501	C-5	C	TC2018	B-2	F	TL2514	B-3	C	TP4001	D-6	C											
QR11151	B-2	C	IC7001	A-3	F	TC2019	B-2	F	TL2515	B-3	C	TP4002	D-6	C											
QR3201	C-1	F	Test Point			TC2020	B-1	F	TL5002	C-5	C	TP4007	A-6	F											
QR3202	B-6	C				TC2021	C-2	F	TL5003	C-5	C	TP4008	A-6	F											
QR3203	E-1	F	TC1001	C-5	F	TC2022	C-2	F	TL5004	D-5	C	TP4009	E-6	C											
QR4001	D-6	C	TC1003	A-6	F	TC3201	C-1	F	TL5005	C-5	C	TP4010	E-6	C											
QR4002	D-6	C	TC1004	B-5	F	TC5014	D-2	F	TL5006	D-5	C	TP4011	E-6	C											
QR4003	C-6	C	TC1005	C-6	F	TC5015	D-2	F	TL5007	D-5	C	TP4012	E-6	C											
QR4004	D-6	C	TC1006	B-5	F	TC6001	D-2	F	TL5008	C-5	C	TP4013	B-6	C											
QR4005	C-6	C	TC1007	B-6	F	TC6002	D-2	F	TL5010	C-5	C	TP4016	B-6	C											
QR4051	E-6	C	TC1008	E-2	F	TC6003	D-2	F	TL5011	C-5	C	TP4017	B-6	C											
QR6001	A-3	C	TC1009	E-2	F	TC6004	C-1	F	TL5012	C-5	C	TP6001	A-1	F											
QR6002	A-3	C	TC1010	E-2	F	TC6005	A-1	F	TL5013	C-5	C	TP6201	E-6	C											
QR6003	B-2	C	TC1011	E-2	F	TC6006	B-3	F	TL5016	C-5	C	TP6202	E-6	C											
QR6004	D-6	C	TC1012	E-2	F	TC6007	D-2	F	TL5018	C-5	C	TP6203	E-6	C											
QR6006	D-6	C	TC1013	E-2	F	TC6008	A-6	F	TL5019	C-5	C	TP6204	E-6	C											
QR6301	A-5	F	TC1014	E-2	F	TC6009	B-5	F	TL5026	C-5	C	TP6205	E-6	C											
Integrated Circuit			TC1015	E-2	F	TC6010	E-1	F	TL5202	C-5	C	TP6206	E-6	C											
			TC1016	E-2	F	TC6012	A-6	F	TL5205	C-5	C	TP6207	E-6	C											
IC1001	B-6	F	TC1017	E-2	F	TC6013	A-5	F	TL5208	C-6	C	TP6208	E-6	C											
IC1002	C-6	F	TC1018	E-2	F	TC6014	E-2	F	TL6020	E-6	C	TP6209	E-6	C											
			TC1019	E-2	F	TC6015	E-2	F	TL6021	E-6	C	TP6210	E-6	C											

ADDRESS INFORMATION



Ref No.	IC1001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0.3	9.1	9.4	9.1	0.5	0	9.3	9.4	9.2	0	0	0	2.5	0	0	0	0	1.5	1.6	1.6
PLAY	0.3	9.1	9.4	9.1	0.5	0.4	8.9	9.4	9.2	0	0	0	2.5	0	2.0	1.7	1.5	1.5	1.6	1.6
Ref No.	IC1001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	1.6	1.5	1.5	1.7	1.8	1.8	1.0	1.7	0	0	2.5	9.4	2.5	1.5	1.7	1.7	1.6	1.8	1.7	1.7
PLAY	1.6	1.5	1.5	1.7	1.8	1.8	1.0	1.7	0	0	0	9.4	2.5	1.5	1.7	1.7	1.6	1.8	1.7	1.7
Ref No.	IC1001																			
MODE	41	42	43	44	45	46	47	48												
STOP	1.5	1.5	1.7	0	0	3.3	3.3	3.2												
PLAY	1.5	1.5	1.7	0	3.3	3.3	3.3	3.2												
Ref No.	IC1002					IC1003														
MODE	1	2	3	4		O	G	I												
STOP	2.5	7.7	0	0		2.5	0	3.3												
PLAY	2.5	7.7	0	0		2.5	0	3.3												
Ref No.	IC2001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	1.6	1.6	1.7	3.2	1.6	1.7	0	1.6	1.6	1.5	1.5	1.5	1.6	3.2	1.6	2.1	0	2.2	1.5	0
PLAY	1.2	1.6	1.7	3.2	1.6	1.7	0	1.6	1.6	1.5	1.5	1.5	1.6	3.2	1.6	2.1	0	2.2	1.5	0
Ref No.	IC2001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	0	0	1.5	1.6	1.5	0	3.2	1.6	1.6	0	1.6	0	1.6	1.6	0	1.5	1.6	3.2	1.6	3.2
PLAY	1.2	1.2	1.8	1.6	1.5	0	3.2	1.6	0	0	1.6	0	1.6	1.6	0	1.5	1.6	3.2	1.6	3.2
Ref No.	IC2001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	0	3.2	1.6	1.9	0	3.3	3.2	1.6	0	0	1.6	3.2	0	1.5	0	0	0	2.5	3.2	0
PLAY	0	3.2	1.6	1.9	0	3.3	0	1.6	0	0	0	1.6	0	2.6	0	0	0	2.5	3.2	0
Ref No.	IC2001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	3.2	0	0	1.6	0	0	3.3	1.6	0	2.3	0	0	0	0	3.2	1.6	1.6	1.6	1.6	1.6
PLAY	3.2	0	0	3.2	0	0	0	1.6	0	1.4	0	0	0	0	3.2	1.6	1.6	1.6	1.6	1.6
Ref No.	IC2001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	0	3.3	3.3	3.0	3.2	3.2	3.3	2.8	3.2	3.2	0	0	0	0	0	2.5	3.6	1.6	1.6	1.6
PLAY	0	3.3	3.3	3.0	3.2	3.2	3.3	2.8	3.2	3.2	0	0	0	0	0	2.5	3.6	1.6	1.6	0.5
Ref No.	IC2501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	5.2	0.3	0	0	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0	1.6	5.2	1.6	0.8	0	9.0
PLAY	5.2	0.3	0	0	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0	1.6	5.2	1.6	0.8	0	9.0
Ref No.	IC2501																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32								
STOP	7.5	3.0	0	0	5.2	0	0	3.2	0	0	0	0								
PLAY	7.5	3.0	0	0	5.2	0	0	3.2	0	0	0	0								
Ref No.	IC2502																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	5.2	5.2	0	0	0	0	0	0	0	1.6	0	0	0	5.2	0	0	0	0	1.6
PLAY	3.2	5.2	5.2	1.6	1.6	1.6	0	0	1.8	1.8	2.6	0	3.5	0	5.2	0	0	1.3	1.6	1.6
Ref No.	IC3001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	3.3	0	0	0	0	1.1	0	1.1	3.3	1.1	3.3	3.0	3.3	1.8	0	0	0	0	0	0
PLAY	3.3	0	1.4	0	0	1.5	0	1.1	3.3	1.5	3.3	3.0	3.3	1.8	0	0	0	0	0	0
Ref No.	IC3001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	0	0	0	0	0	0	3.3	3.3	0	3.3	2.9	3.2	1.5	3.3	2.9	3.0	2.7	2.9	1.8	2.6
PLAY	0	0	0	0	0	0	2.4	3.3	0	3.3	2.4	3.2	1.5	3.3	2.3	2.4	2.0	2.3	1.8	2.0
Ref No.	IC3001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	3.0	2.8	2.6	0	2.5	2.5	2.7	3.3	3.0	2.9	3.0	0	3.3	3.0	3.0	3.0	3.0	0	3.0	3.0
PLAY	2.3	2.2	2.2	0	2.2	1.6	2.7	3.3	2.4	2.2	2.6	0	3.3	2.4	2.5	2.5	2.6	0	2.7	2.2
Ref No.	IC3001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	3.0	3.0	1.8	3.0	3.0	3.0	3.0	0	3.0	0	1.6	3.3	3.3	3.3	0	0	0	0	1.8	0
PLAY	2.5	2.6	1.8	2.5	2.5	2.5	2.7	0	2.7	0.4	1.6	0.9	3.3	3.3	1.7	1.6	1.6	2.0	1.8	2.0

Ref No.	IC3001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	0	0	0	0	1.6	0	1.8	1.5	1.6	1.6	3.3	0	0	0	0	0	0	3.3	1.5	3.3
PLAY	1.6	1.5	1.8	0	1.6	0.8	1.8	1.5	1.6	1.6	3.3	0.8	0	0	0	0	0	3.3	1.5	3.3
Ref No.	IC3001																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
STOP	0	0	0	1.8	1.8	0	0	1.8	3.2	1.6	3.3	3.3	0.3	0	0	0.3	2.4	3.0	1.0	3.3
PLAY	0.3	0	0	1.8	1.8	0	0	1.8	0	1.6	3.3	3.3	0.3	0	0	0.3	2.0	3.0	1.0	3.3
Ref No.	IC3001																			
MODE	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
STOP	1.4	3.0	3.0	1.1	0	1.0	1.0	2.2	0.6	3.2	1.4	1.4	2.1	0	0	0	0	0	0	0
PLAY	0	3.0	3.0	2.0	0	1.0	1.0	2.2	1.1	3.2	1.1	1.4	2.1	0.5	0	2.3	0	0	0	0
Ref No.	IC3001																			
MODE	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
STOP	0	0	3.2	3.0	0	1.8	0	0	0	0	0	0	0	0	0	3.3	0	3.0	3.0	3.3
PLAY	0	0	3.2	2.2	0	1.8	0	0	0	0	0	0	0	0	0	3.3	0	2.2	2.5	3.3
Ref No.	IC3001																			
MODE	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
STOP	3.0	2.9	0	2.8	0	0	3.0	2.9	0	2.9	3.1	3.3	2.9	1.8	2.9	0	2.9	2.9	3.3	3.0
PLAY	3.0	2.6	0	2.5	2.6	3.3	3.0	2.6	0	2.6	2.5	3.3	2.6	1.8	2.5	0	2.5	2.6	3.3	2.5
Ref No.	IC3001																			
MODE	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
STOP	2.9	0	1.7	3.3	1.7	0	3.3	1.8	2.8	3.3	3.3	2.8	3.2	0	3.2	3.1	3.3	3.3	3.1	0
PLAY	2.4	0	1.7	3.3	1.7	0	3.3	1.8	2.1	3.3	3.3	2.0	3.2	0	3.2	3.1	3.3	3.3	3.1	0
Ref No.	IC3001																			
MODE	201	202	203	204	205	206	207	208												
STOP	0	1.8	1.1	0	3.3	0	0.9	0												
PLAY	0	1.8	1.4	0	0	0	1.2	0												
Ref No.	IC3061																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	3.3	3.0	2.9	0	2.9	2.9	3.3	3.1	0	0	2.9	2.9	3.3	2.8	3.1	3.2	3.1	3.1	1.4	0
PLAY	3.3	2.6	2.5	0	2.5	2.6	3.3	2.5	0	0	2.5	2.5	3.3	2.1	3.1	3.2	3.1	3.1	1.4	0
Ref No.	IC3061																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	0	0	0	1.1	3.3	0	1.0	1.1	1.1	1.2	0	0	0	3.3	1.7	2.8	0	3.3	3.0	2.9
PLAY	0	0	0	1.5	3.3	0	1.0	1.5	1.5	1.2	0	0	0	3.3	1.7	2.0	0	3.3	2.6	2.6
Ref No.	IC3061																			
MODE	41	42	43	44	45	46	47	48	49	50										
STOP	0	2.9	2.9	3.3	3.0	2.8	0	2.8	3.0	0										
PLAY	0	2.6	2.6	3.3	3.0	2.8	0	2.8	2.3	0										
Ref No.	IC3201																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	4.9	1.6	0	1.6	1.7	1.7	1.6	0	0.3	1.7	1.5	2.1	2.0	0	2.0	4.9				
PLAY	4.9	1.6	0	1.6	2.0	2.2	2.0	0	0.3	2.1	2.0	2.1	2.0	0	2.0	4.9				
Ref No.	IC3202																			
MODE	1	2	3	4	5	6	7	8												
STOP	2.3	0	0	0	4.9	2.1	1.6	5.0												
PLAY	2.3	0	0	0	4.9	2.1	2.0	5.0												
Ref No.	IC4001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	1.6	0	1.6	0	3.3	4.9	2.5	2.4	0	2.4	3.2	0	3.2	2.7	3.3	1.6				
PLAY	1.6	0.8	1.6	0	3.3	4.9	2.5	2.4	0	2.4	0	0	3.2	2.7	3.3	1.6				
Ref No.	IC4002										IC4003									
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8			
STOP	4.4	4.4	4.4	0	4.4	4.4	4.4	8.9		3.8	3.8	3.8	3.8	3.8	0	9.4	3.8			
PLAY	4.4	4.4	4.4	0	4.4	4.4	4.4	8.9		3.8	3.8	3.8	3.8	3.8	0	9.4	3.8			
Ref No.	IC4004																			
MODE	1	2	3	4	5	6	7	8												
STOP	8.9	4.4	4.4	4.4	3.7	0	3.7	3.7												
PLAY	8.9	4.4	4.4	4.4	3.7	0	3.7	3.7												
Ref No.	IC4051																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	0	2.6	5.2	2.6	2.6	0	2.6	0	0	0	0	2.6	2.6	2.6	2.6	5.2	2.6	0	0
PLAY	0	0	2.6	5.2	2.6	2.6	0	2.6	0	0	0	0	2.6	2.6	2.6	2.6	5.2	2.6	0	0
Ref No.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	3.3	3.3	0	3.3	1.8	2.9	2.9	0	3.3	0	0	3.3	3.3	3.3	3.3	0	3.3	3.0	0	3.2
PLAY	3.3	3.3	0	3.3	1.5	2.9	2.9	0	3.3	0	0	3.3	3.3	3.3	3.3	0	3.3	3.0	0	3.2
Ref No.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	3.3	3.3	3.3	3.6	3.3	3.3	3.3	3.3	0	3.3	3.3	3.3	3.3	3.3	0	0	0	0	0	3.3
PLAY	3.3	3.3	3.3	3.6	3.3	3.3	3.3	3.3	0	3.3	3.3	3.3	3.3	3.3	0	0	0	0	0	3.3
Ref No.	IC6001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	0	0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
PLAY	0	0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Ref No.	IC6002					IC6003					IC6004					IC6005				
MODE	1	2	3	4		1	2	3			1	2	3	4	5		1	2	3	4
STOP	3.3	3.3	0	0		0	5.0	0			9.3	0	8.9	3.3	9.0		0	9.2	5.0	0
PLAY	3.3	3.3	0	0		0	5.0	0			9.3	0	8.9	3.3	9.0		0	9.2	5.0	0
Ref No.	IC6006																			
MODE	1	2	3	4																
STOP	0	9.2	3.3	0																
PLAY	0	9.2	3.3	0																
Ref No.	IC6201																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	3.3	3.0	3.2	3.1	3.2	3.2	3.2	2.9	0	0	3.2	3.2	2.3	2.9	2.9	2.7	3.3	1.5	0	2.9
PLAY	3.3	2.4	3.2	3.1	3.2	3.2	3.2	2.3	3.2	0	3.2	3.2	1.2	2.3	2.4	2.0	3.3	1.5	0	2.9
Ref No.	IC6201																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	3.2	3.2	1.6	1.6	3.2	2.8	2.6	3.0	2.8	2.6	2.5	2.5	2.7	3.3	2.7	2.5	2.8	2.8	2.5	2.3
PLAY	3.2	3.2	1.6	1.6	3.2	2.3	2.0	2.3	2.2	2.2	2.2	1.6	2.7	3.3	2.4	1.6	2.3	2.8	1.4	1.5

Ref No.	IC6201																			
MODE	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0
STOP	2.7	2.3	0	3.2	3.2	3.2	3.2	0	0	2.9	1.8	2.9	3.2	3.2	3.2	3.2	3.2	0	0	3.2
PLAY	2.3	1.2	0	3.2	3.2	3.2	3.2	0	0	2.9	0.9	2.9	3.2	3.2	3.2	3.2	3.2	0	0	3.2
Ref No.	IC6201																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	0	0	0	0	3.2	3.2	3.2	3.2	0	2.8	3.2	3.2	3.2	3.2	2.8	3.2	3.3	0	0	0
PLAY	0	0	3.2	0	0	3.2	3.2	3.2	0	2.8	3.2	3.2	3.2	3.2	3.2	3.2	3.3	0	0	3.2
Ref No.	IC6201																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	0	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
PLAY	3.2	3.2	3.2	2.4	2.3	3.2	3.2	2.5	2.5	2.6	2.6	0	2.2	2.4	2.6	2.5	2.5	2.5	2.7	2.7
Ref No.	IC6301																			
MODE	1	2	3	4	5															
STOP	0	0	0	3.2	3.2															
PLAY	0	0	0	3.2	3.2															
Ref No.	IC6302																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	2.6	2.9	2.8	2.5	2.7	1.6	1.1	1.1	0	0	2.1	3.2	0	0	0	0	0	0.5	1.1	1.4
PLAY	1.5	2.6	2.3	1.6	2.4	2.7	1.6	2.2	0	0	3.2	3.2	0	0	0	1.2	2.3	2.3	2.2	2.3
Ref No.	IC6302																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	2.6	2.9	2.7	2.9	2.9	2.9	0	2.9	3.0	2.9	2.9	3.0	3.0	3.0	3.0	3.0	3.3	3.0	3.0	3.0
PLAY	2.0	2.3	2.0	2.4	2.3	2.3	0	2.4	2.4	2.2	2.2	2.4	2.6	2.6	2.4	2.5	3.3	2.5	2.6	2.5
Ref No.	IC6302																			
MODE	41	42	43	44	45	46	47	48												
STOP	3.0	3.0	3.0	3.0	3.0	0	3.3	2.3												
PLAY	2.5	2.6	2.7	2.7	2.7	0	3.3	1.5												
Ref No.	IC6303																			
MODE	1	2	3	4	5	6	7	8												
STOP	0	0	0	0	3.2	3.2	0	3.2												
PLAY	0	0	0	0	3.2	3.2	0	3.2												
Ref No.	IC6501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	3.3	0	1.6	1.6	3.3	0	1.5	1.5	1.5	1.6	0	3.2	1.5	3.2	1.5	3.2				
PLAY	3.3	0	1.6	1.6	3.3	0	1.5	1.5	1.5	1.6	0	3.2	1.5	3.2	1.5	3.2				
Ref No.	IC7001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	3.3	0	3.3	3.3	0	0	0	0	2.5	3.3	0	3.3	0	3.3	3.3	0	0	0	0
PLAY	2.2	3.3	2.0	3.3	3.3	1.8	0	0	0	2.5	3.3	2.0	3.3	1.9	3.3	3.3	2.0	0	0	1.8
Ref No.	IC7001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	3.3	3.3	3.3	3.3	0	3.3	0	0	0	3.3	0	3.3	0	0	0	2.5	2.3	2.5	0	2.9
PLAY	3.3	3.3	3.3	0.9	0	3.3	0	0	0	3.3	0	3.3	0	0	0	2.5	1.5	1.4	0	2.9
Ref No.	IC7001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	2.8	2.6	2.7	2.5	2.7	2.5	2.6	2.6	2.8	3.0	2.7	2.9	2.7	3.0	2.9	0	2.4	3.2	3.2	3.0
PLAY	2.8	2.6	2.4	2.5	2.7	1.6	2.2	2.3	2.2	2.3	2.0	2.4	2.0	2.4	2.3	0	1.2	3.2	3.2	2.4
Ref No.	IC6303																			
MODE	1	2	3	4	5	6	7	8												
STOP	0	0	0	0	3.2	3.2	0	3.2												
PLAY	0	0	0	0	3.2	3.2	0	3.2												
Ref No.	IC6501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	3.3	0	1.6	1.6	3.3	0	1.5	1.5	1.5	1.6	0	3.2	1.5	3.2	1.5	3.2				
PLAY	3.3	0	1.6	1.6	3.3	0	1.5	1.5	1.5	1.6	0	3.2	1.5	3.2	1.5	3.2				
Ref No.	IC7001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	3.3	0	3.3	3.3	0	0	0	0	2.5	3.3	0	3.3	0	3.3	3.3	0	0	0	0
PLAY	2.2	3.3	2.0	3.3	3.3	1.8	0	0	0	2.5	3.3	2.0	3.3	1.9	3.3	3.3	2.0	0	0	1.8
Ref No.	IC7001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	3.3	3.3	3.3	3.3	0	3.3	0	0	0	3.3	0	3.3	0	0	0	2.5	2.3	2.5	0	2.9
PLAY	3.3	3.3	3.3	0.9	0	3.3	0	0	0	3.3	0	3.3	0	0	0	2.5	1.5	1.4	0	2.9
Ref No.	IC7001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	2.8	2.6	2.7	2.5	2.7	2.5	2.6	2.6	2.8	3.0	2.7	2.9	2.7	3.0	2.9	0	2.4	3.2	3.2	3.0
PLAY	2.8	2.6	2.4	2.5	2.7	1.6	2.2	2.3	2.2	2.3	2.0	2.4	2.0	2.4	2.3	0	1.2	3.2	3.2	2.4
Ref No.	IC7001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	3.3	3.0	3.0	0	0	2.5	0	3.0	3.0	3.0	0	3.0	3.0	3.0	1.6	3.3	0	3.3	0	0
PLAY	3.3	2.7	2.7	0	0	2.5	0	2.5	2.5	2.3	1.5	2.6	2.2	1.4	1.3	3.3	1.4	3.3	0	0
Ref No.	IC7001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	3.3	0	0	0	3.0	2.5	0	0	0	0	0	3.3	0	3.3	1.6	0	3.3	0	0	1.6
PLAY	3.3	0	0	0	3.0	2.5	0	3.3	0	0	0	0	1.3	1.8	1.6	0	3.3	0	0	1.6
Ref No.	IC7001																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
STOP	1.6	3.3	0	3.3	3.3	0	0	0	2.2	0	1.6	1.6	1.6	1.6	1.6	3.3	3.3	3.3	0	0
PLAY	1.6	3.3	0	3.3	3.3	0	0	0	1.3	0	1.6	1.6	1.6	1.6	1.6	3.3	3.3	3.3	0	0
Ref No.	IC7001																			
MODE	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
STOP	0	0	0	3.3	2.5	3.3	0	3.3	3.3	3.3	1.6	3.3	3.3	0	3.3	0	0	3.3	3.3	1.6
PLAY	0	0	0	3.3	2.5	3.3	0	3.3	3.3	3.3	1.6	3.3	3.3	0	3.3	0	0.5	3.3	3.3	0
Ref No.	IC7001																			
MODE	141	142	143	144																
STOP	1.6	0	3.3	3.3																
PLAY	1.6	0	3.3	3.3																

Ref No.	Q1001				Q1002				Q1003				Q1004				Q1006			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
STOP	9.4	1.8	9.2		9.4	3.1	9.1		9.4	5.3	9.3		9.4	5.0	9.0		5.0	5.0	4.3	
PLAY	9.4	1.8	9.2		9.4	3.1	9.1		9.4	5.3	9.0		9.4	5.0	9.0		5.0	5.0	4.3	
Ref No.	Q1008				Q1009				Q1010				Q1011				Q1101			
MODE	S	G	D		S	G	D		S	G	D		S	G	D		1	2	3	
STOP	0	2.5	0		0	2.5	0		0	2.5	0		0	2.5	0		0	0	0.6	
PLAY	0	2.5	0		0	2.5	0		0	2.5	0		0	2.5	0		0	0	0.6	
Ref No.	Q1151				Q3202				Q3203				Q3204				Q4001			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
STOP	5.0	4.3	5.0		0	0	2.3		0	0	0		3.2	4.9	3.8		0	0	0.6	
PLAY	5.0	4.3	5.0		2.7	0	2.3		0	0	0		3.2	4.9	3.8		0	0	0.6	
Ref No.	Q4002				Q4003				Q4004				Q5001				Q5002			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
STOP	0	0	0.6		0	0	0		0	0	0		4.9	1.6	4.5		4.9	1.0	4.5	
PLAY	0	0	0.6		0	0	0		0	0	0		3.9	2.2	3.3		4.9	1.0	4.5	
Ref No.	Q6003				Q6004				QR1007				QR1101							
MODE	E	C	B		E	C	B		E	C	B		E	C	B					
STOP	9.2	9.2	8.6		9.3	0	9.6		0	0	3.2		0	0	3.2					
PLAY	0	0	8.6		9.3	0	8.5		0	0	3.2		0	3.4	0					
Ref No.	QR1102								QR1151				QR3201				QR3202			
MODE	1	2	3	4	5	6		1	2	3	4	5		E	C	B		E	C	B
STOP	5.0	3.3	0	0	0	5.0		5.0	0	3.3	0	0		0	3.3	0		0	0	0
PLAY	5.0	3.3	0	0	0	5.0		5.0	0	3.3	0	0		0	0	3.2		0	0	0
Ref No.	QR3203				QR4001				QR4002				QR4003							
MODE	E	C	B		E	C	B		E	C	B		E	C	B					
STOP	0	4.9	0		4.9	-0.4	4.9		0	4.9	0		0	1.8	0					
PLAY	0	4.9	0		4.9	-0.4	4.9		0	4.9	0		4.8	-1.3	4.8					
Ref No.	QR4004								QR4005				QR4051							
MODE	1	2	3	4	5		1	2	3	4	5		1	2	3	4	5			
STOP	0	0	0	0	0		0	0	0	0	0		1.8	0	1.8	0	0			
PLAY	4.8	4.8	0	0	0		4.8	4.8	0	0	0		1.8	0	1.8	0	0			
Ref No.	QR6001				QR6002				QR6003				QR6004							
MODE	E	C	B		1	2	3	4	5		1	2	3	4	5		E	C	B	
STOP	9.2	0	9.2		0	8.6	0	0	3.3		0	0	0	0	0		0	3.7	0	
PLAY	9.2	0	0		0	8.6	0	0	0		0	0	0	0	0		0	3.7	0	
Ref No.	QR6006				QR6301				Q8201				Q8202				Q8401			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
STOP	3.3	0	3.3		0	3.0	0		0.5	3.2	0.5		0.5	0.5	1.0		1.5	-12.5	0.9	
PLAY	3.3	0	3.3		0	3.0	0		0.5	3.2	0.5		0.5	0.5	1.0		1.5	-12.5	0.9	
Ref No.	Q8402				Q8406				QR8401											
MODE	E	C	B		1	2	3	4	5	6		E	C	B						
STOP	1.5	7.2	2.0		0.9	1.5	-12.6	2.0	1.5	7.3		0	0	3.5						
PLAY	1.5	7.2	2.0		0.9	1.5	-12.6	2.0	1.5	7.3		0	3.3	0						

RECHARGE BATTERY P.C.B.

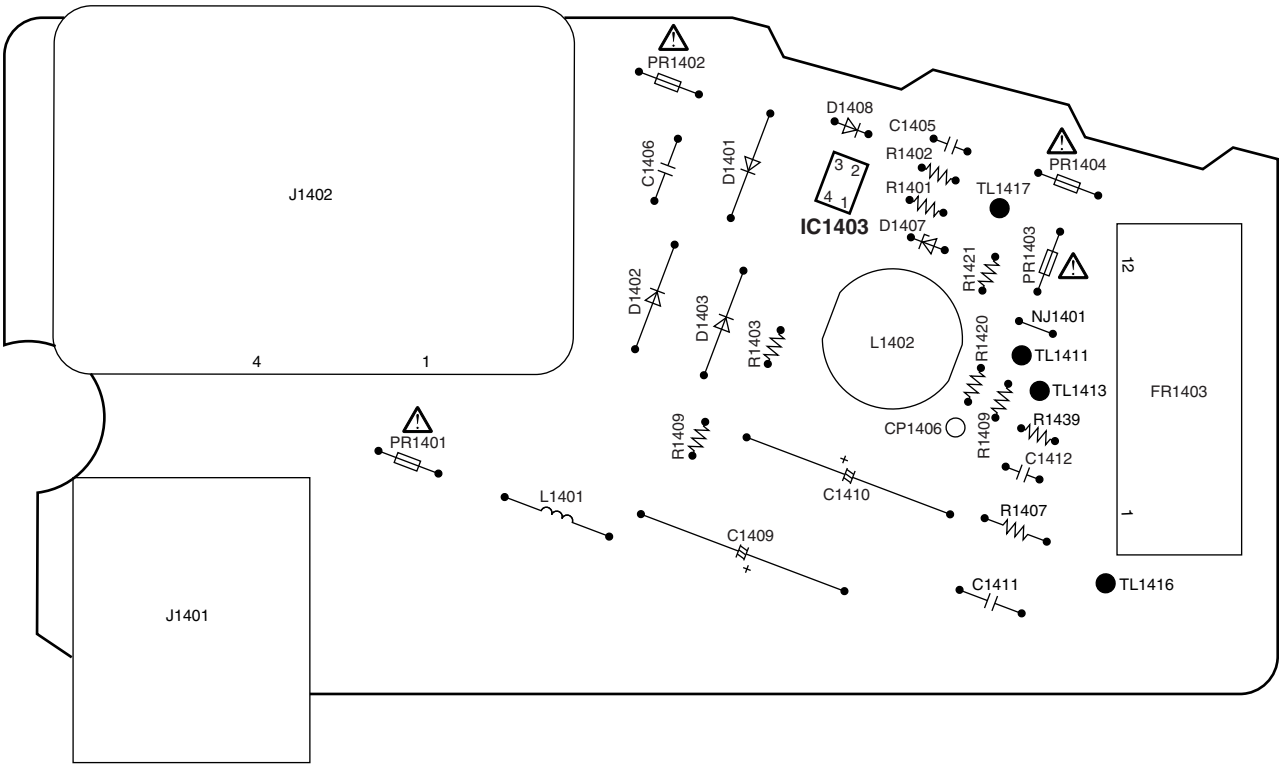
E

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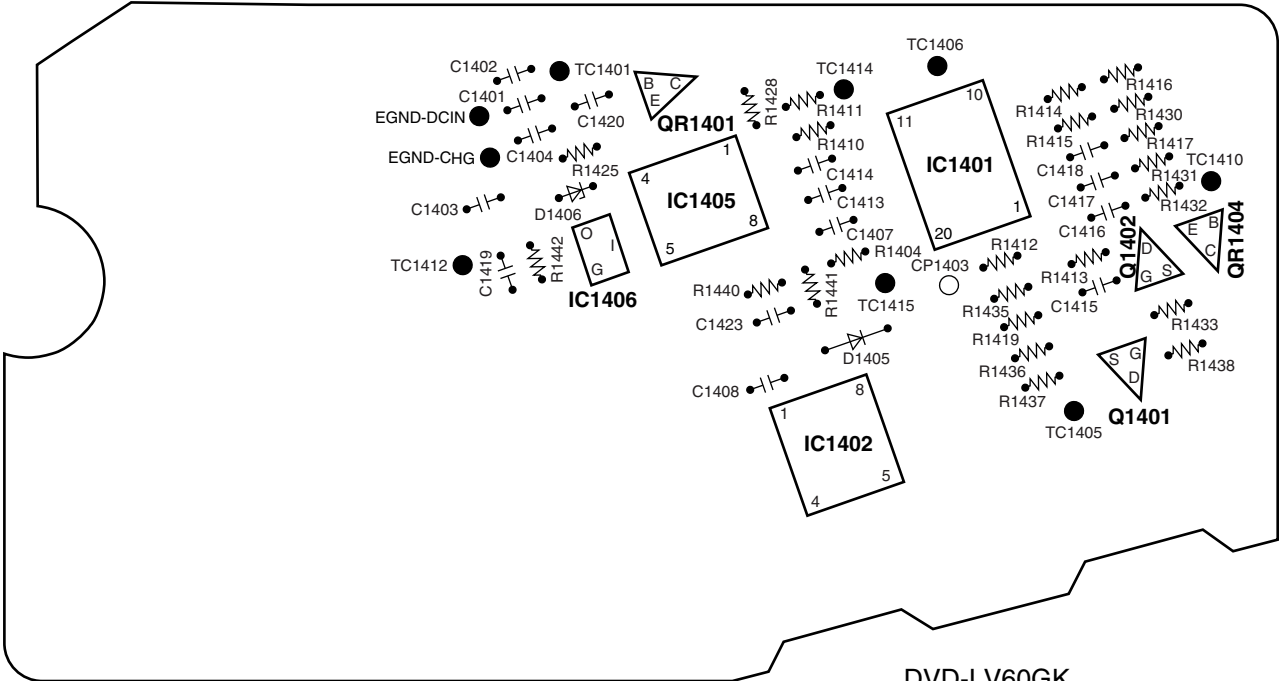
C

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A



(COMPONENT SIDE)



(FOIL SIDE)

DVD-LV60GK
RECHARGE BATTERY P.C.B.
REP3167C-M

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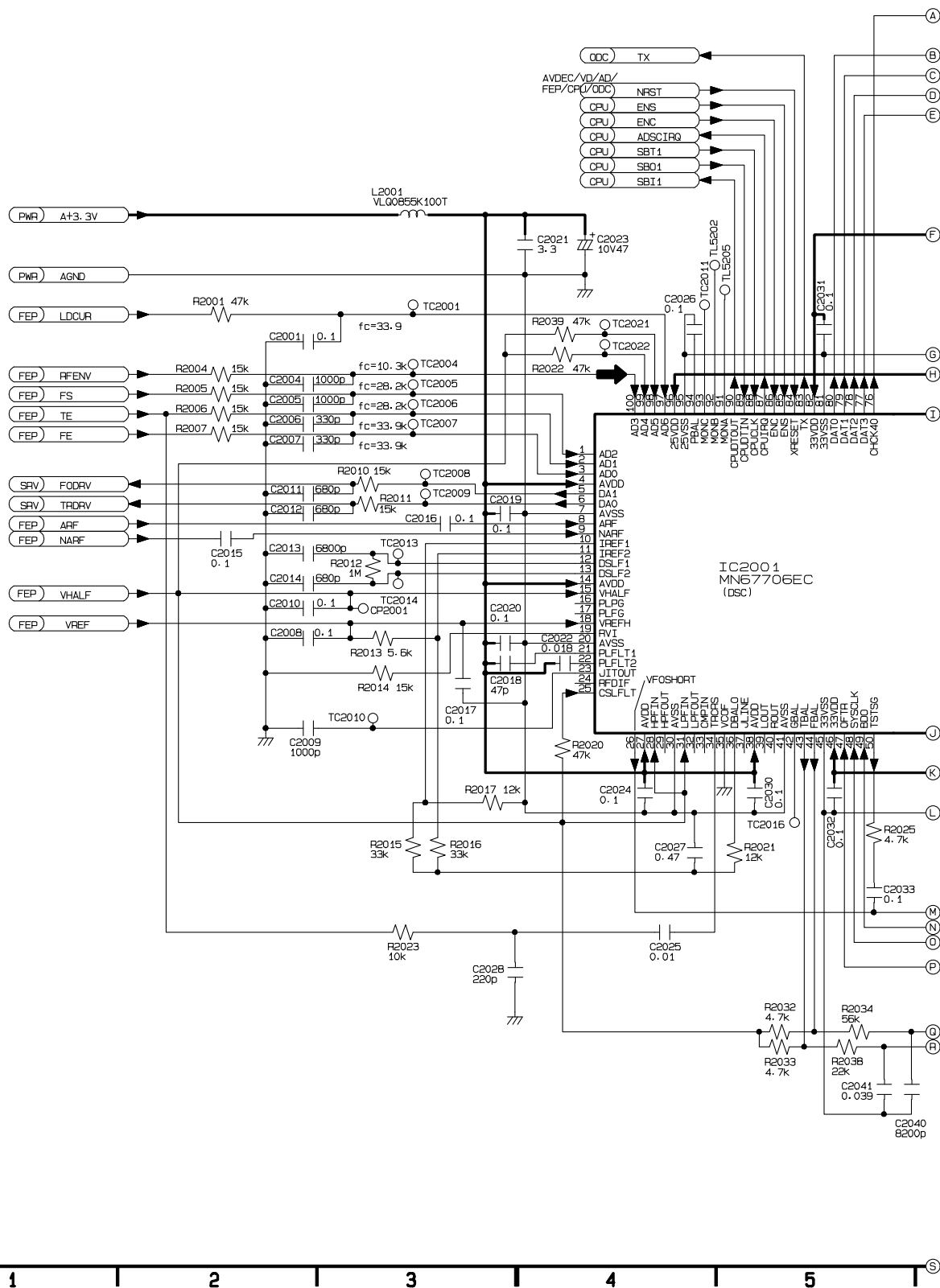
E

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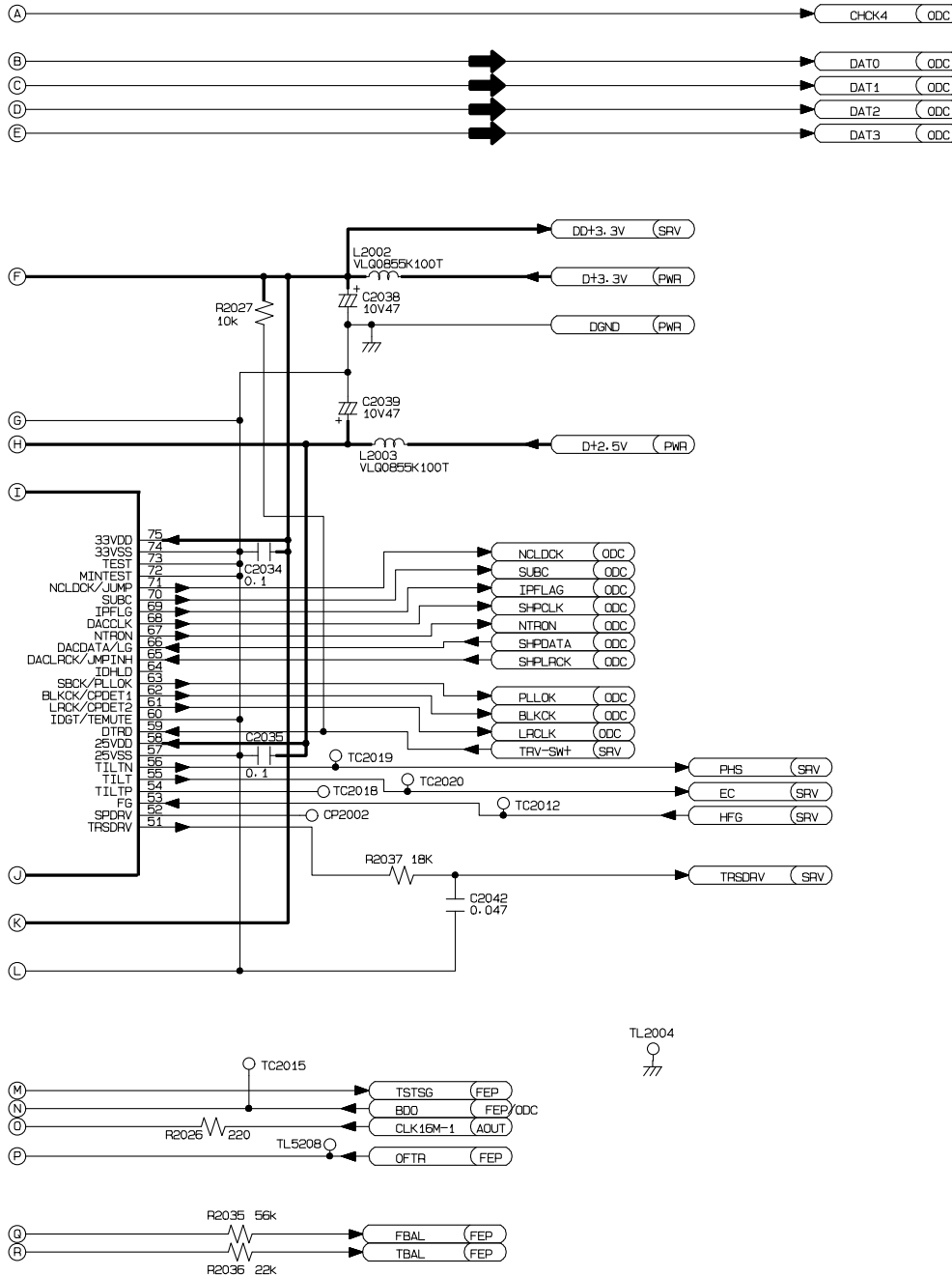


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SRV SECTION: Page 54
ODC SECTION: Page 60
VOUT SECTION: Page 66

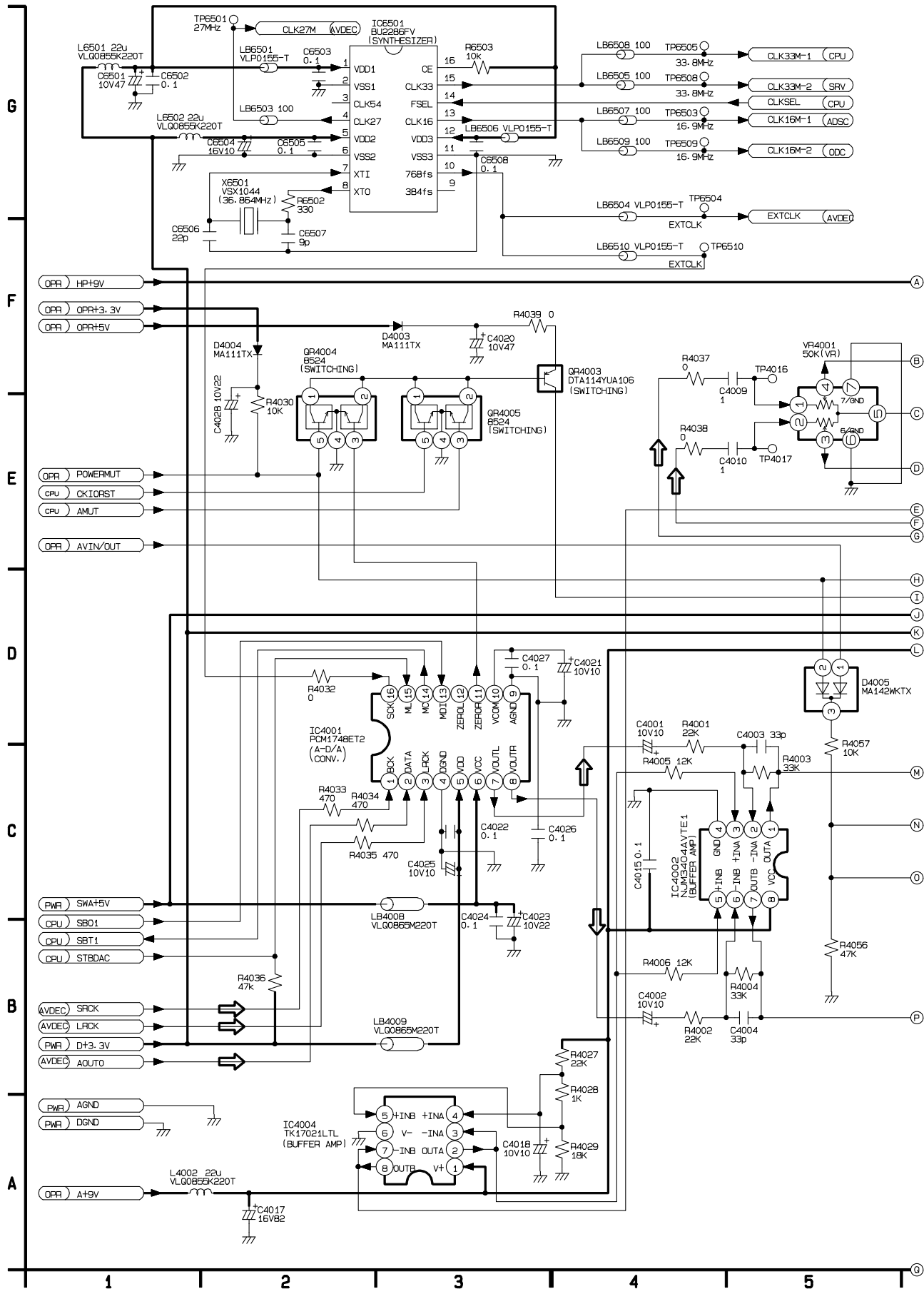
FEP SECTION: Page 56
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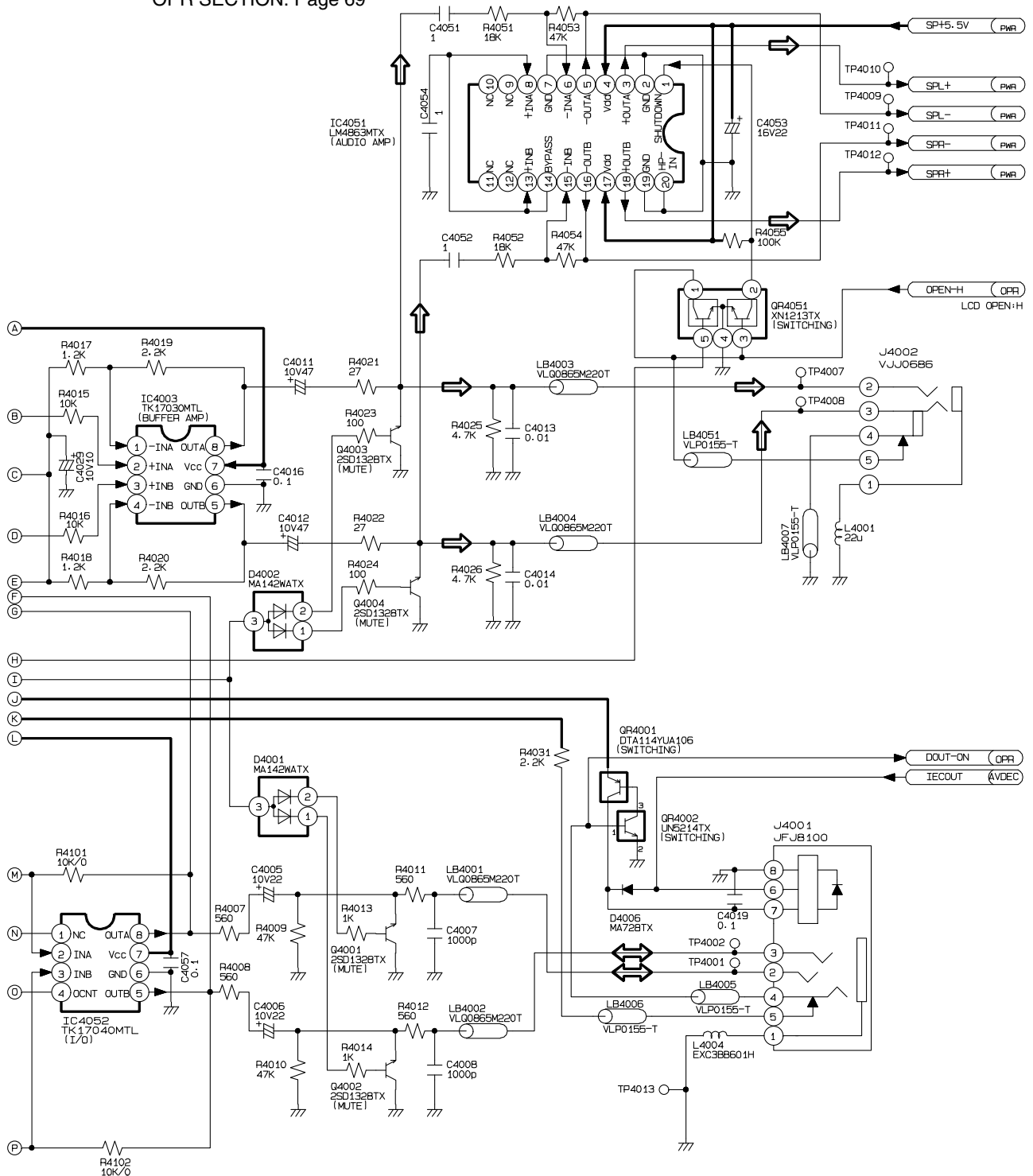
← MAIN SIGNAL PATH



DVD-LV60GK ADSC SECTION (MAIN P.C.B. (4/10)) SCHEMATIC DIAGRAM

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

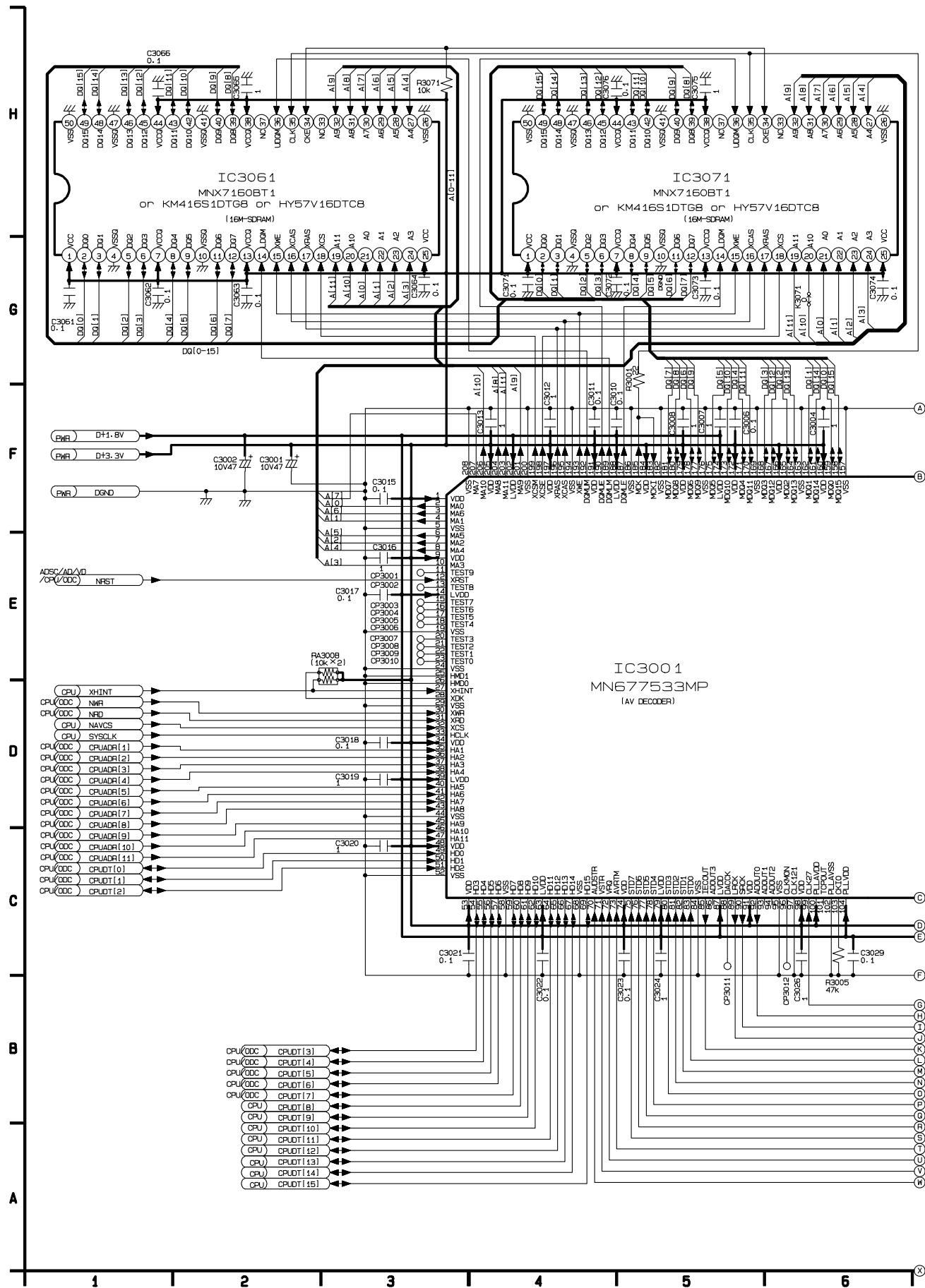




DVD-LV60GK
AUDIO OUT SECTION (MAIN P.C.B. (7/10))
SCHEMATIC DIAGRAM

← AUDIO SIGNAL

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

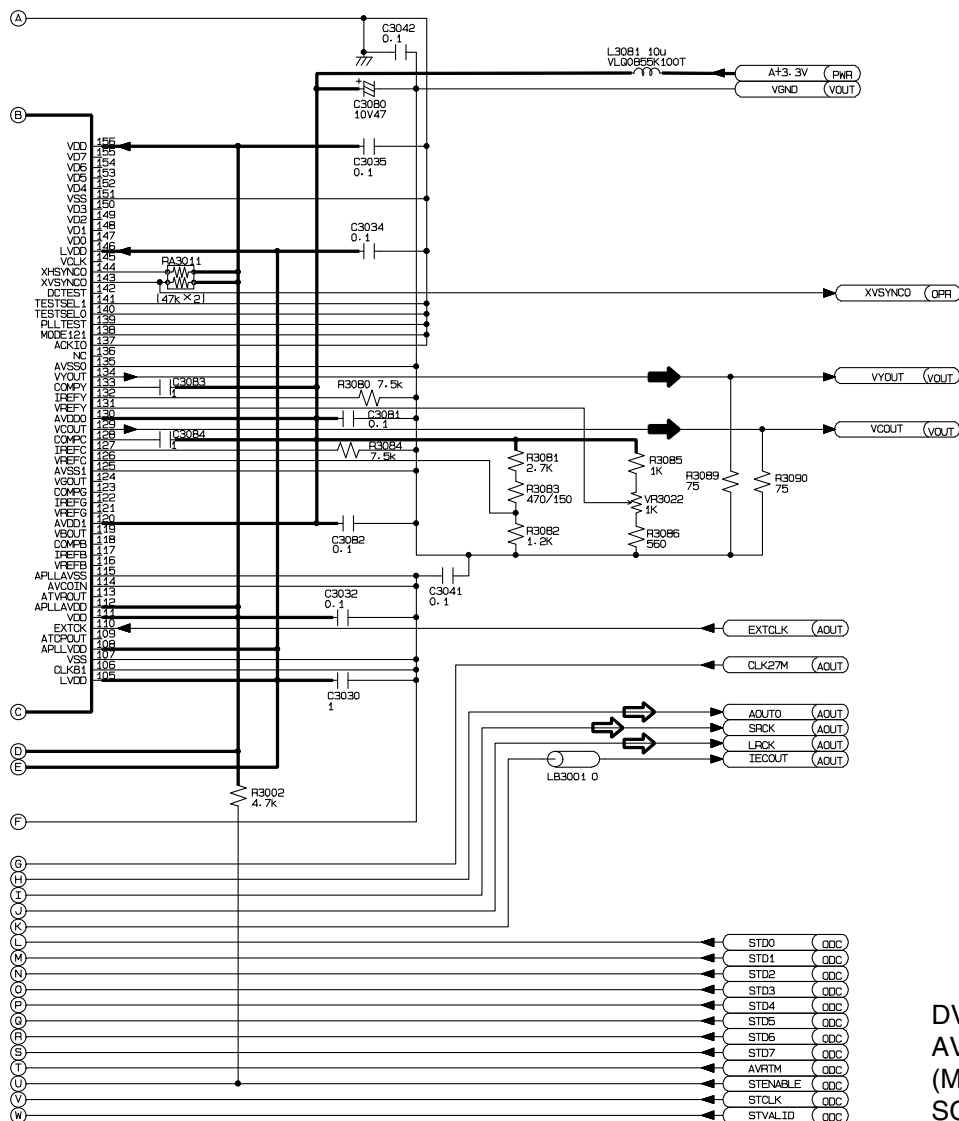


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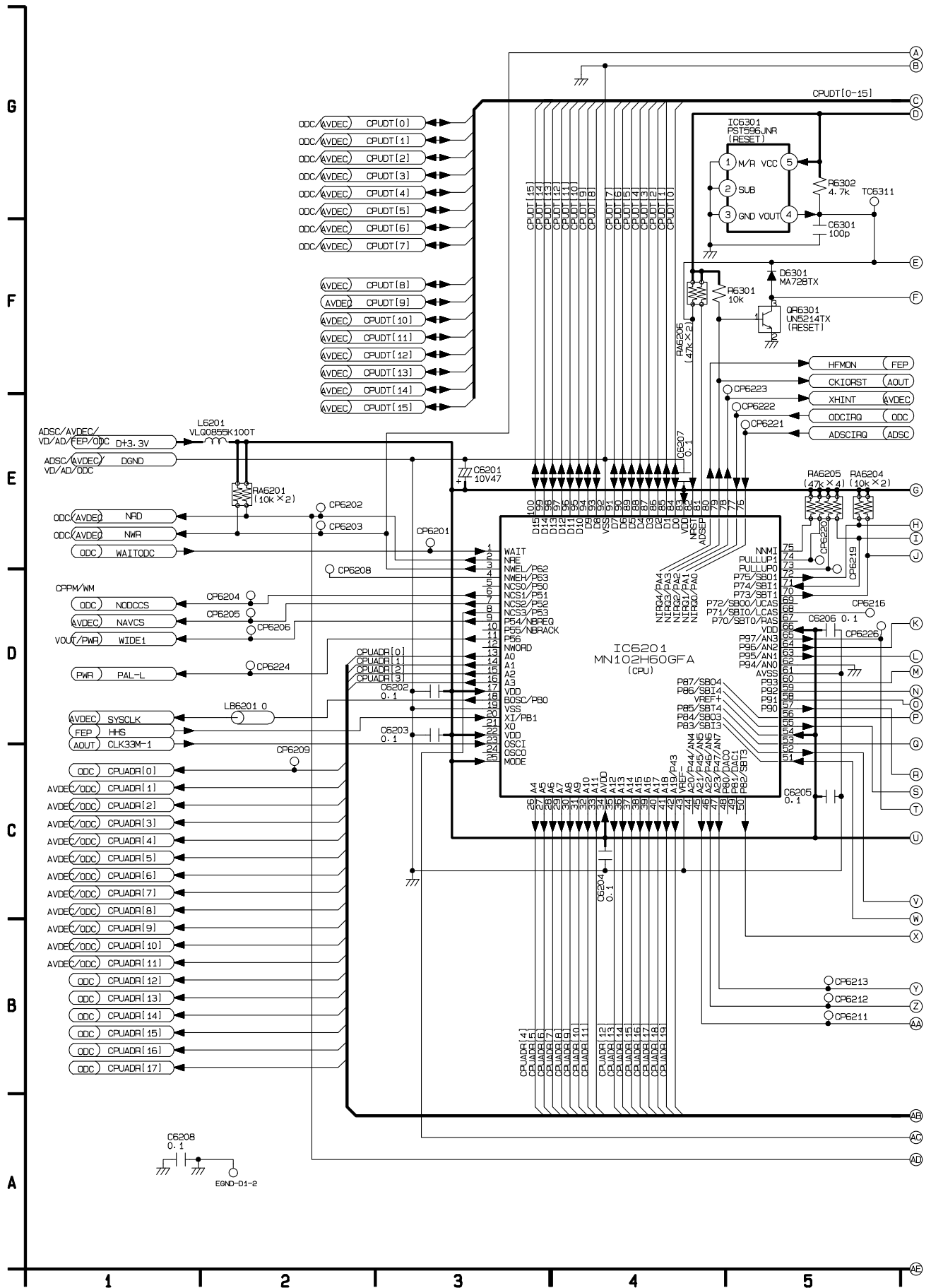
FEP SECTION: Page 56
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← VIDEO SIGNAL
⇌ AUDIO SIGNAL



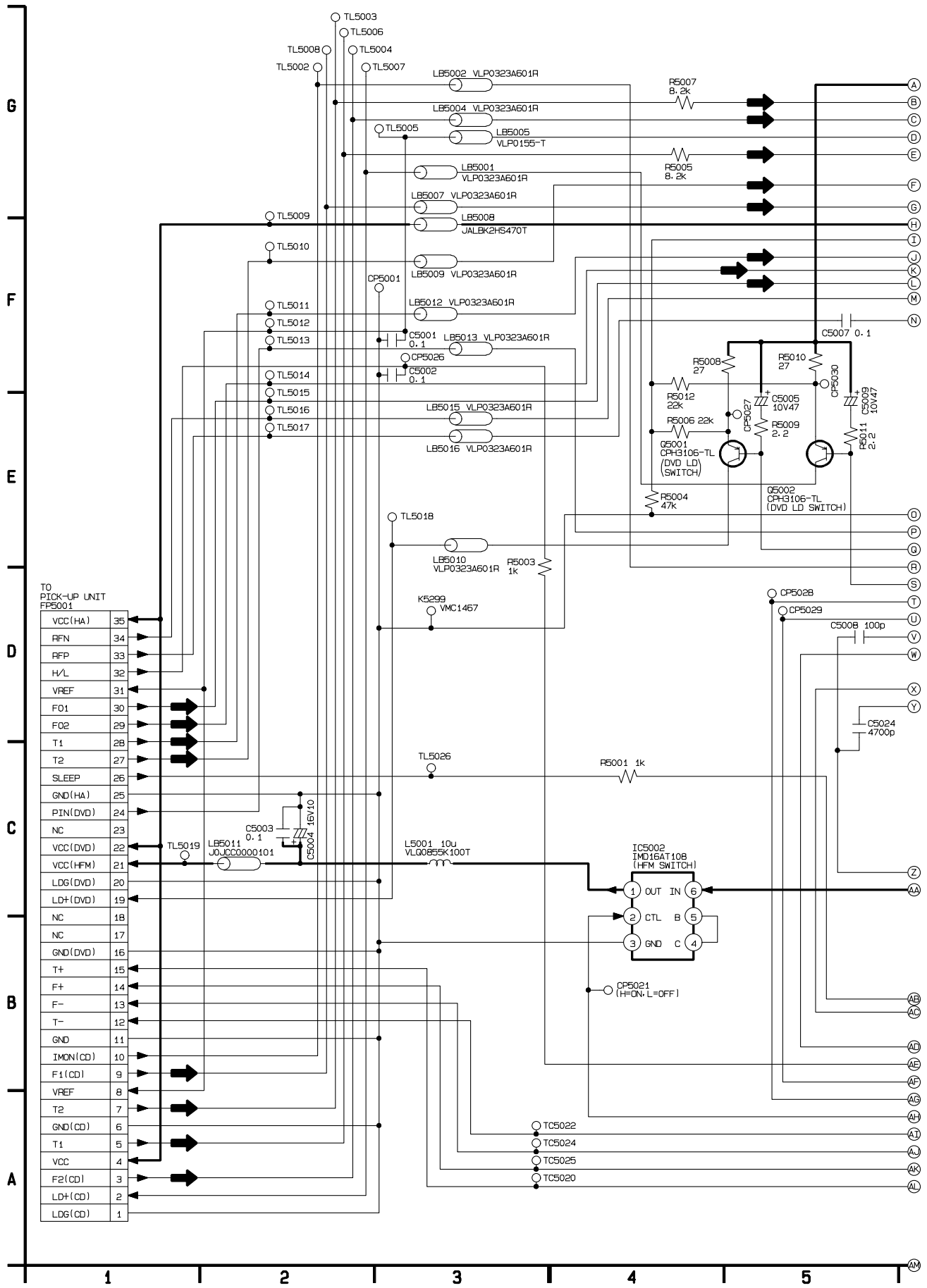
DVD-LV60GK
AV DECODER SECTION
(MAIN P.C.B. (6/10))
SCHEMATIC DIAGRAM

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NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.



TO
PICK-UP UNIT
FP5001

VCC (HA)	35
RFN	34
RFP	33
H/L	32
VREF	31
F01	30
F02	29
T1	28
T2	27
SLEEP	26
GND (HA)	25
PIN (DVD)	24
NC	23
VCC (DVD)	22
VCC (HFM)	21
LD6 (DVD)	20
LD+ (DVD)	19
NC	18
NC	17
GND (DVD)	16
T+	15
F+	14
F-	13
T-	12
GND	11
IMON (CD)	10
F1 (CD)	9
VREF	8
T2	7
GND (CD)	6
T1	5
VCC	4
F2 (CD)	3
LD+ (CD)	2
LD6 (CD)	1

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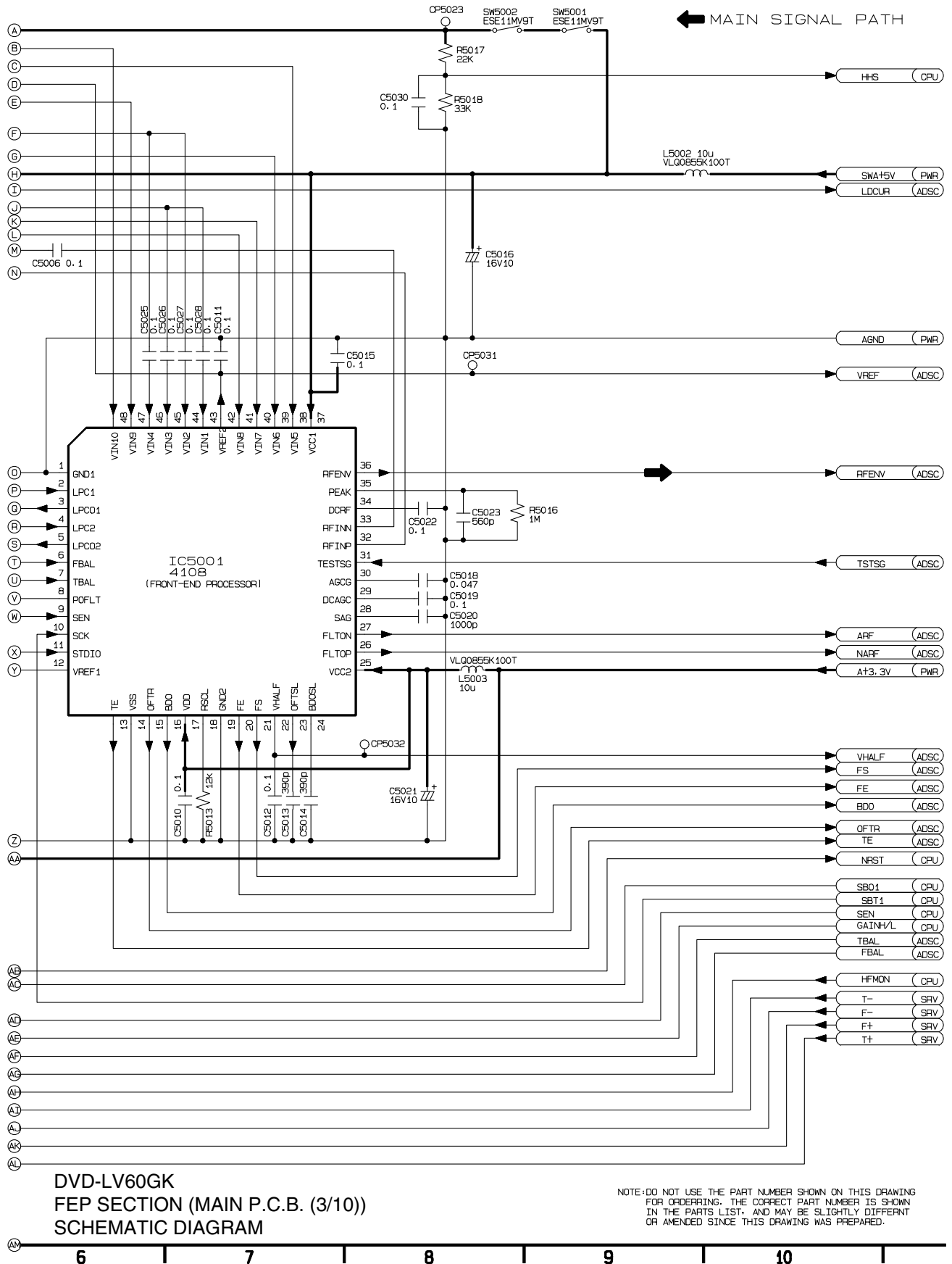
A

1 2 3 4 5 AM

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DVD-LV60GK
FEP SECTION (MAIN P.C.B. (3/10))
SCHEMATIC DIAGRAM

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

Interconnection

G

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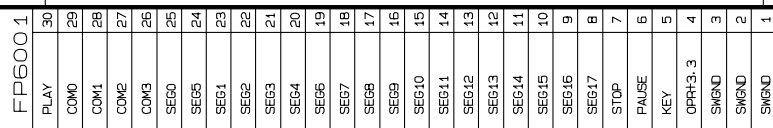
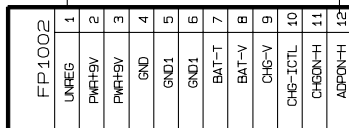
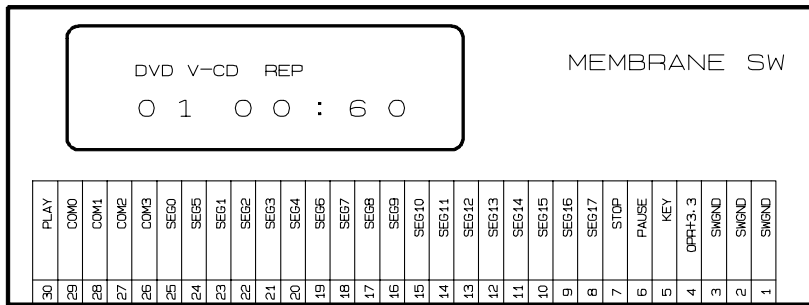
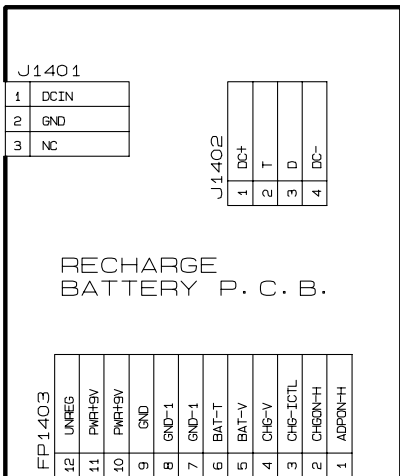
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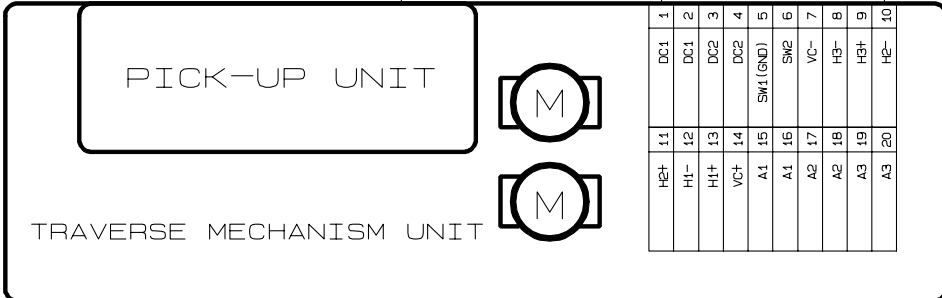
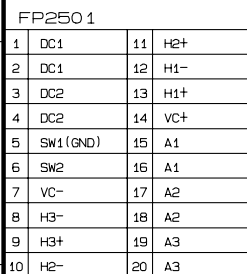
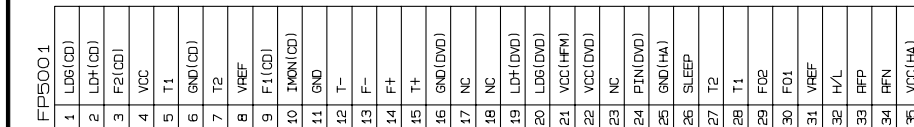
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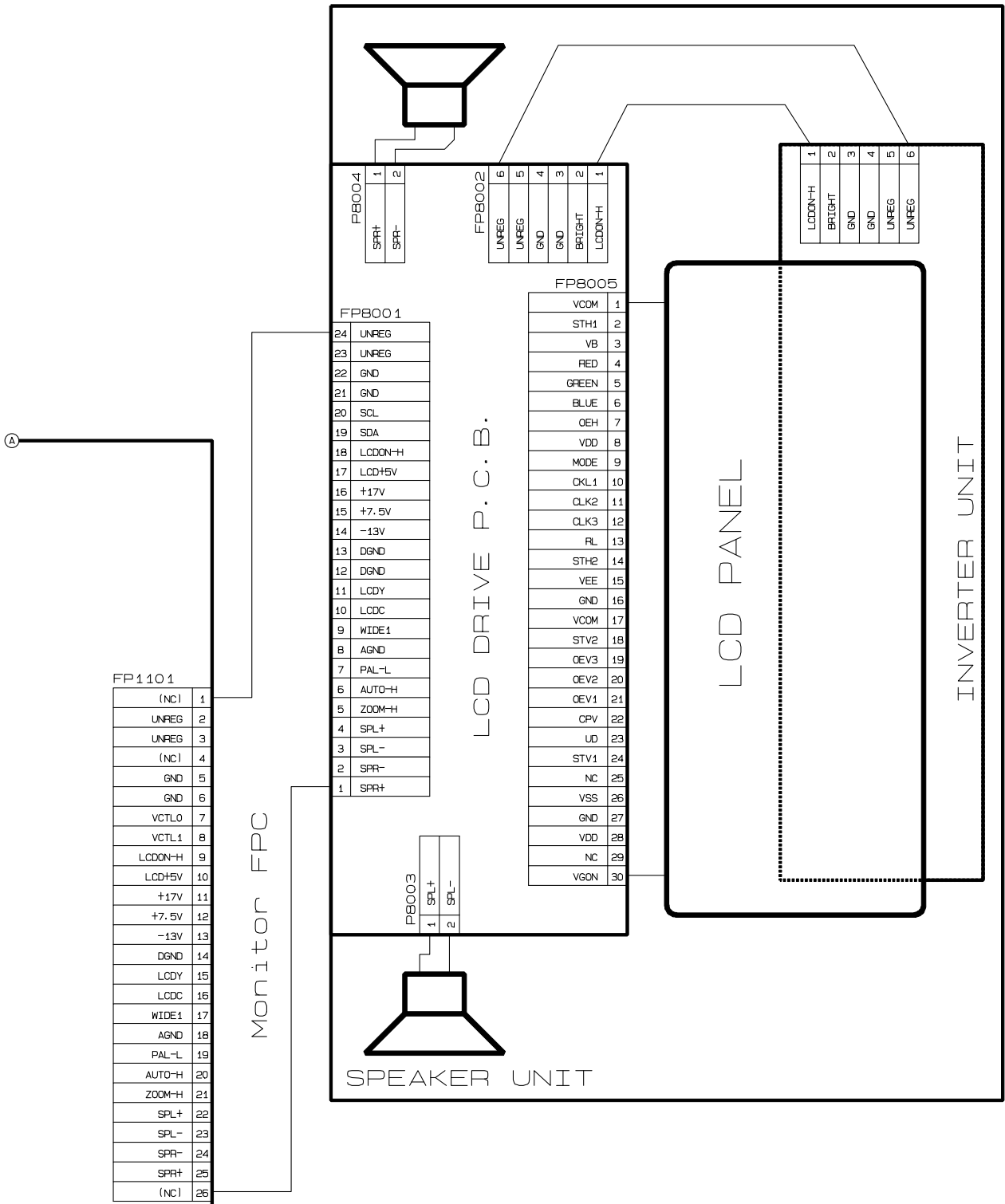
B

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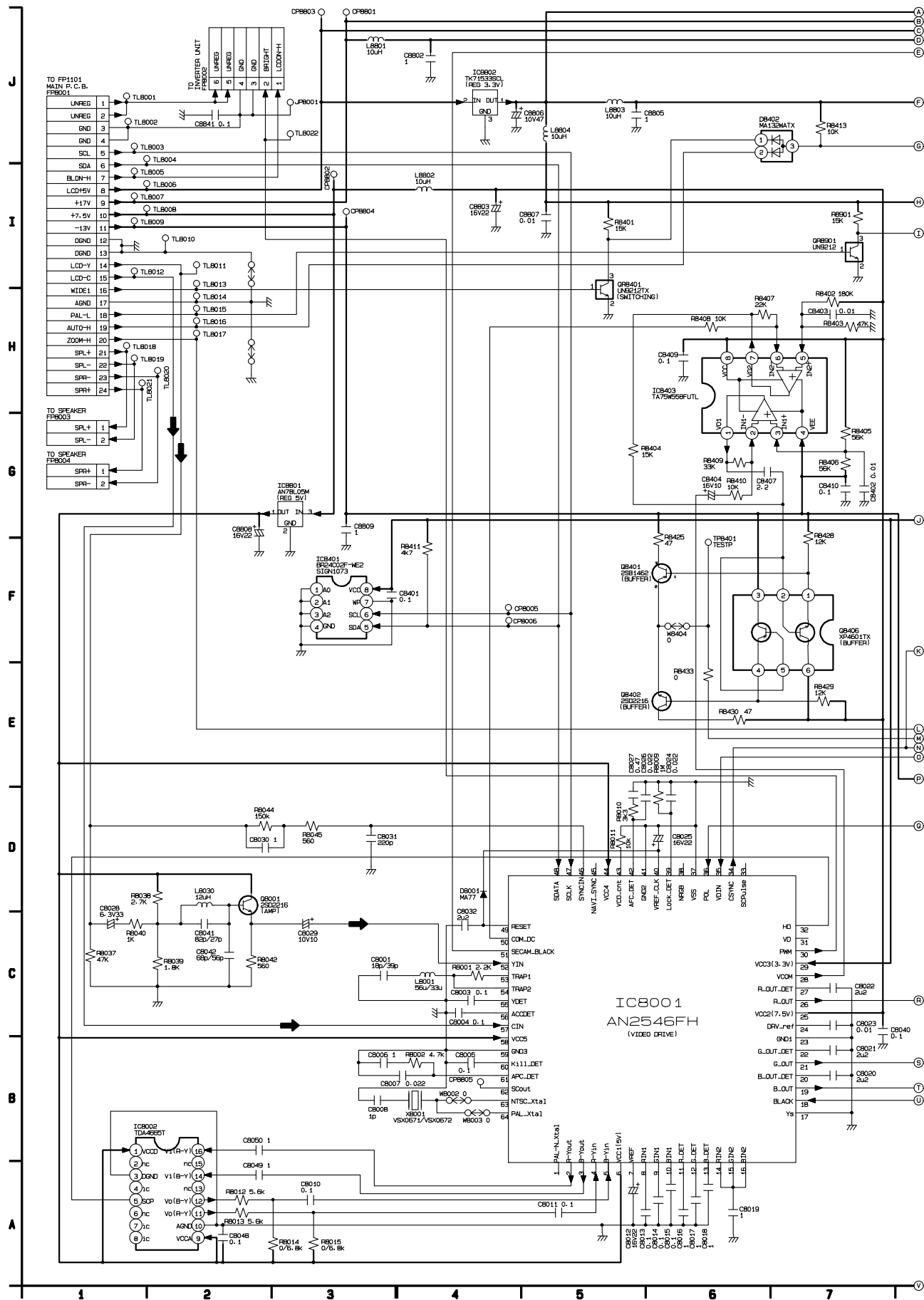


MAIN P. C. B.





DVD-LV60GK
INTERCONNECTION SCHEMATIC DIAGRAM





NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING
FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN
IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT
OR AMENDED SINCE THIS DRAWING WAS PREPARED.

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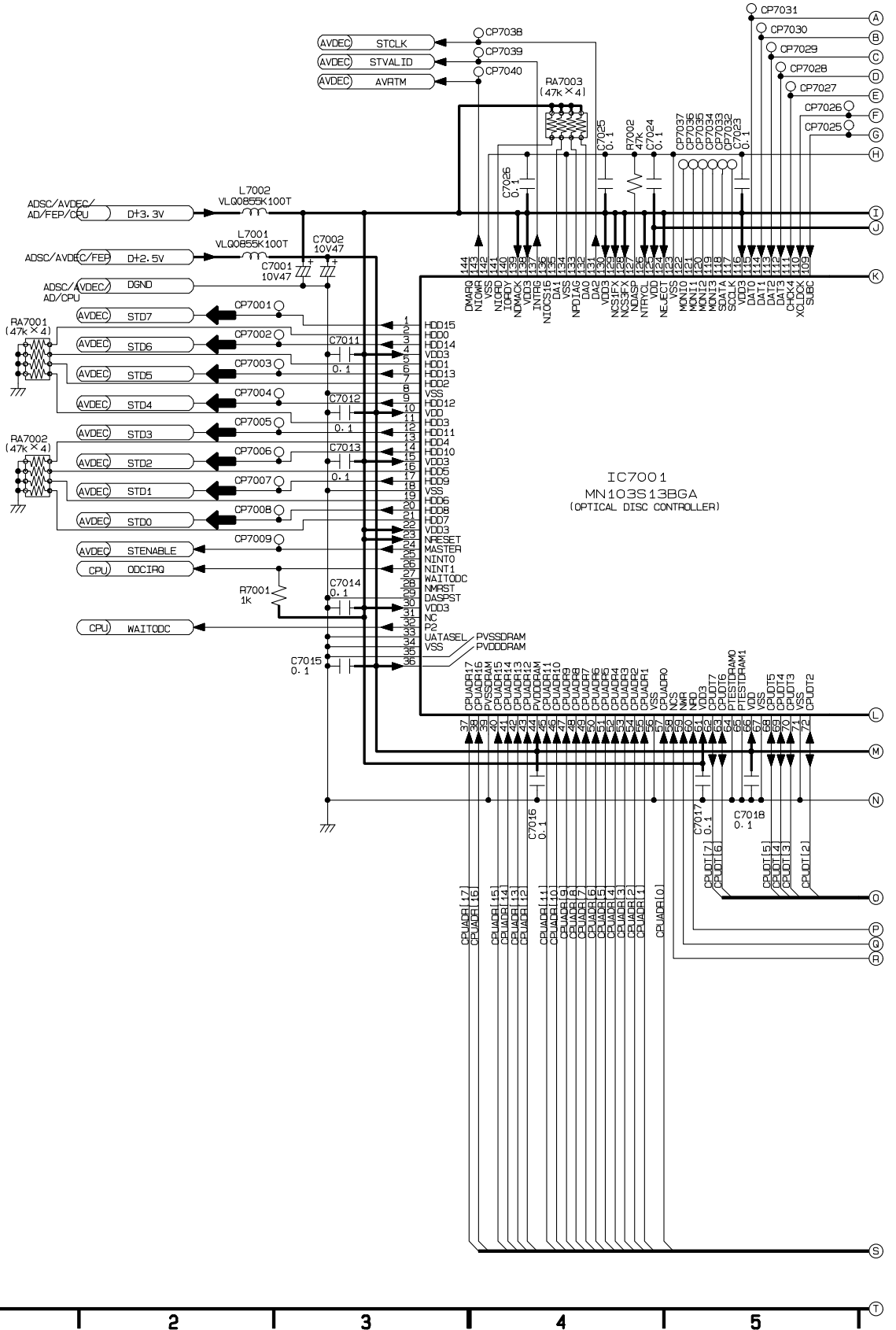
E

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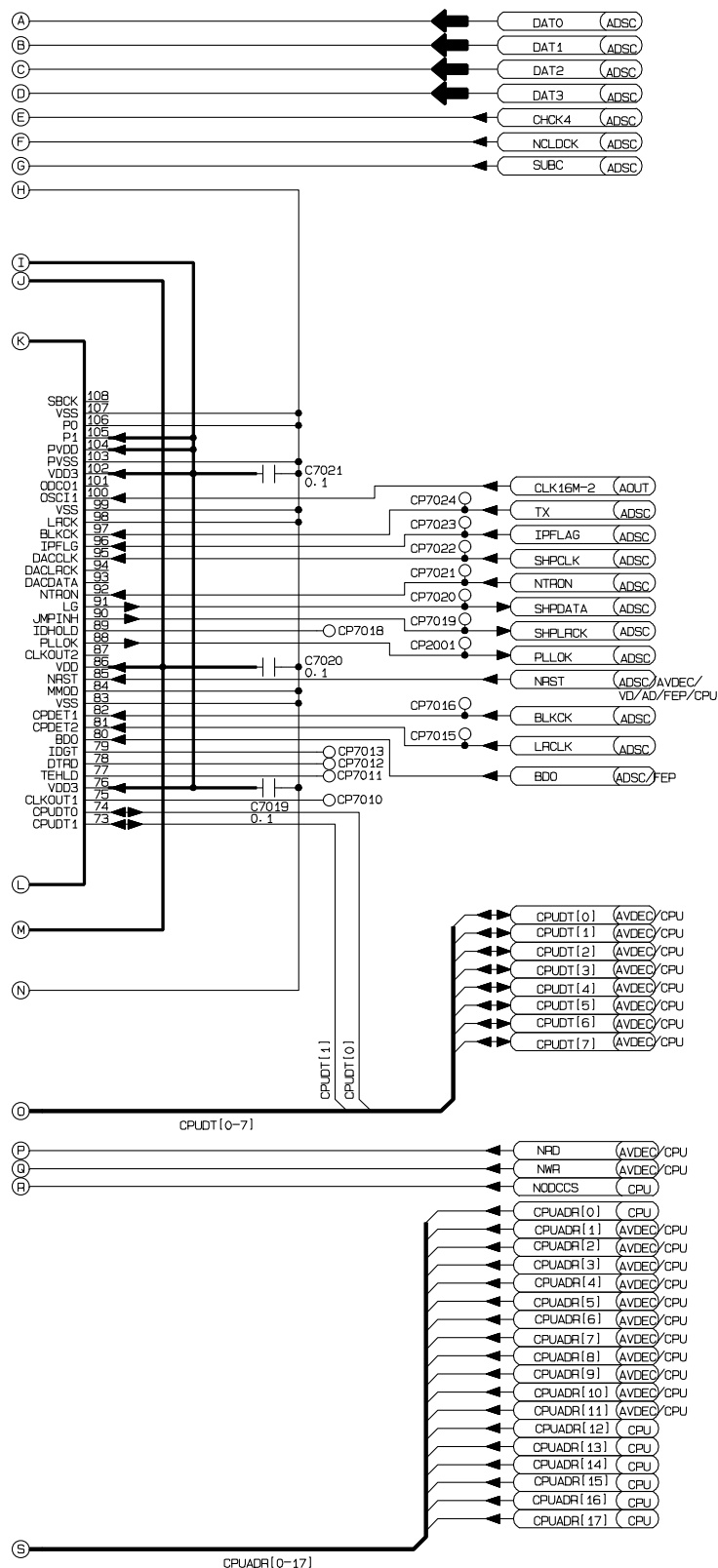


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← MAIN SIGNAL PATH



DVD-LV60GK
ODC SECTION (MAIN P.C.B. (5/10))
SCHEMATIC DIAGRAM

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

G

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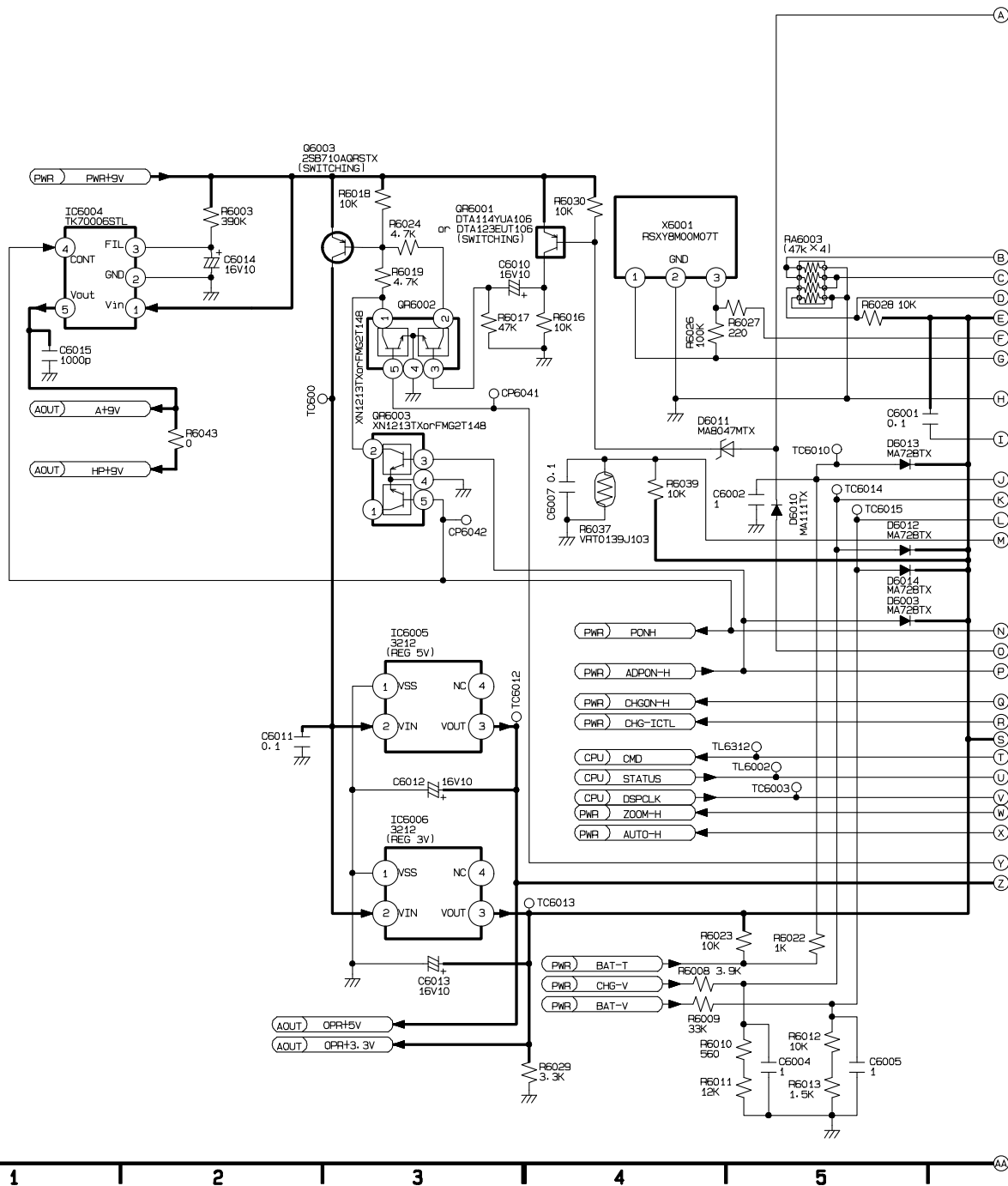
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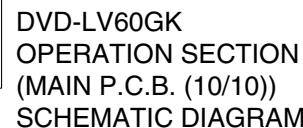
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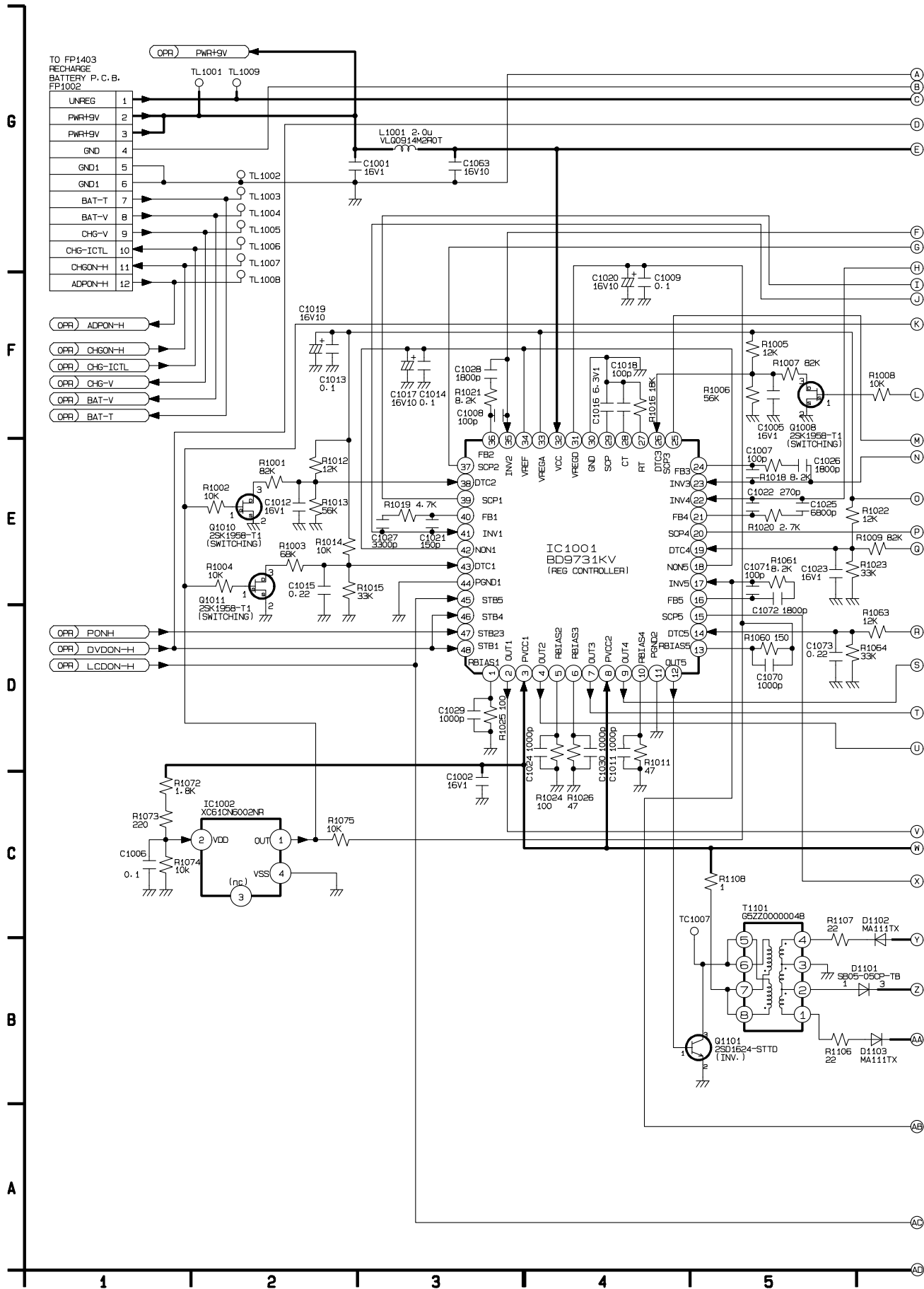
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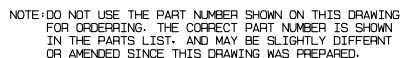
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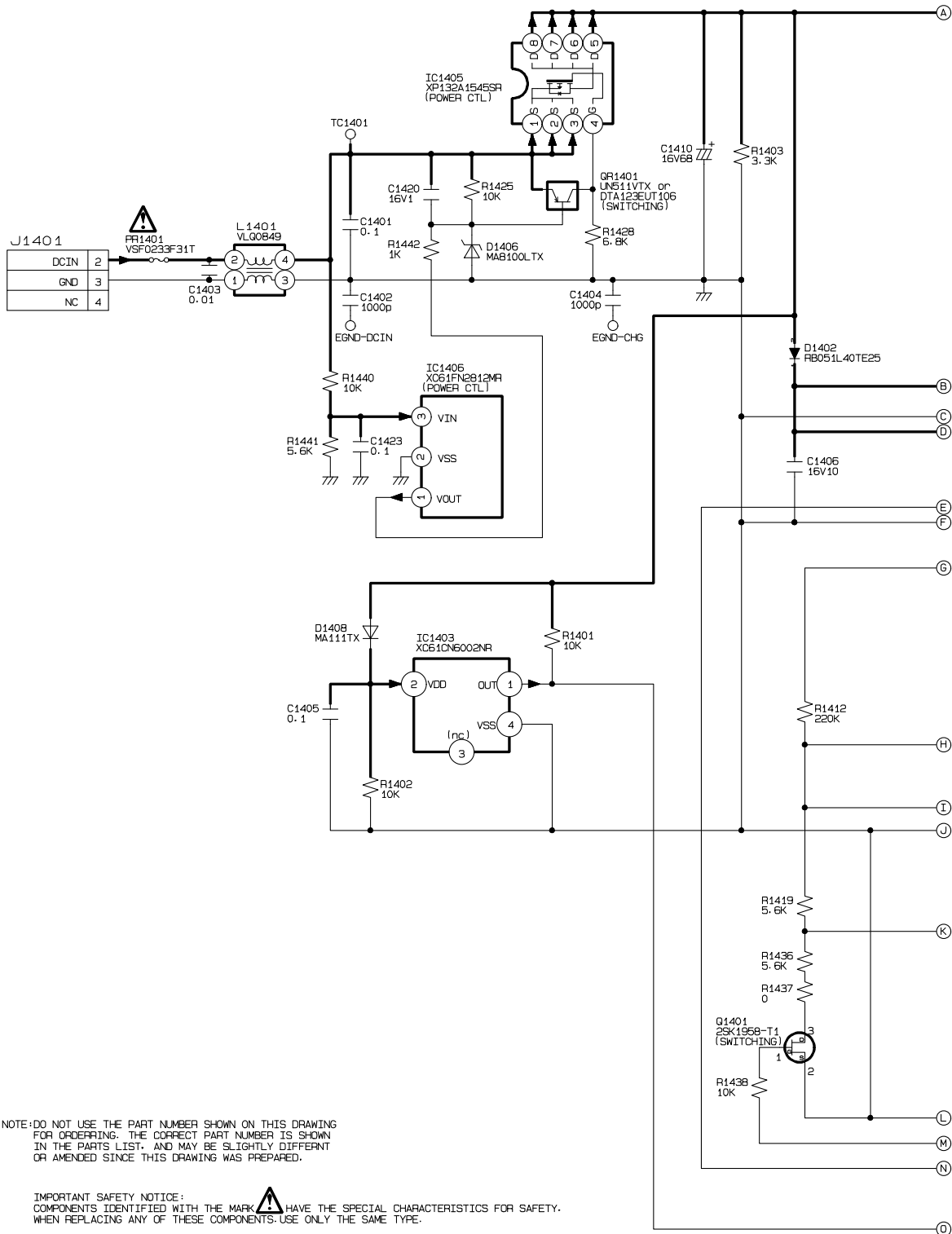


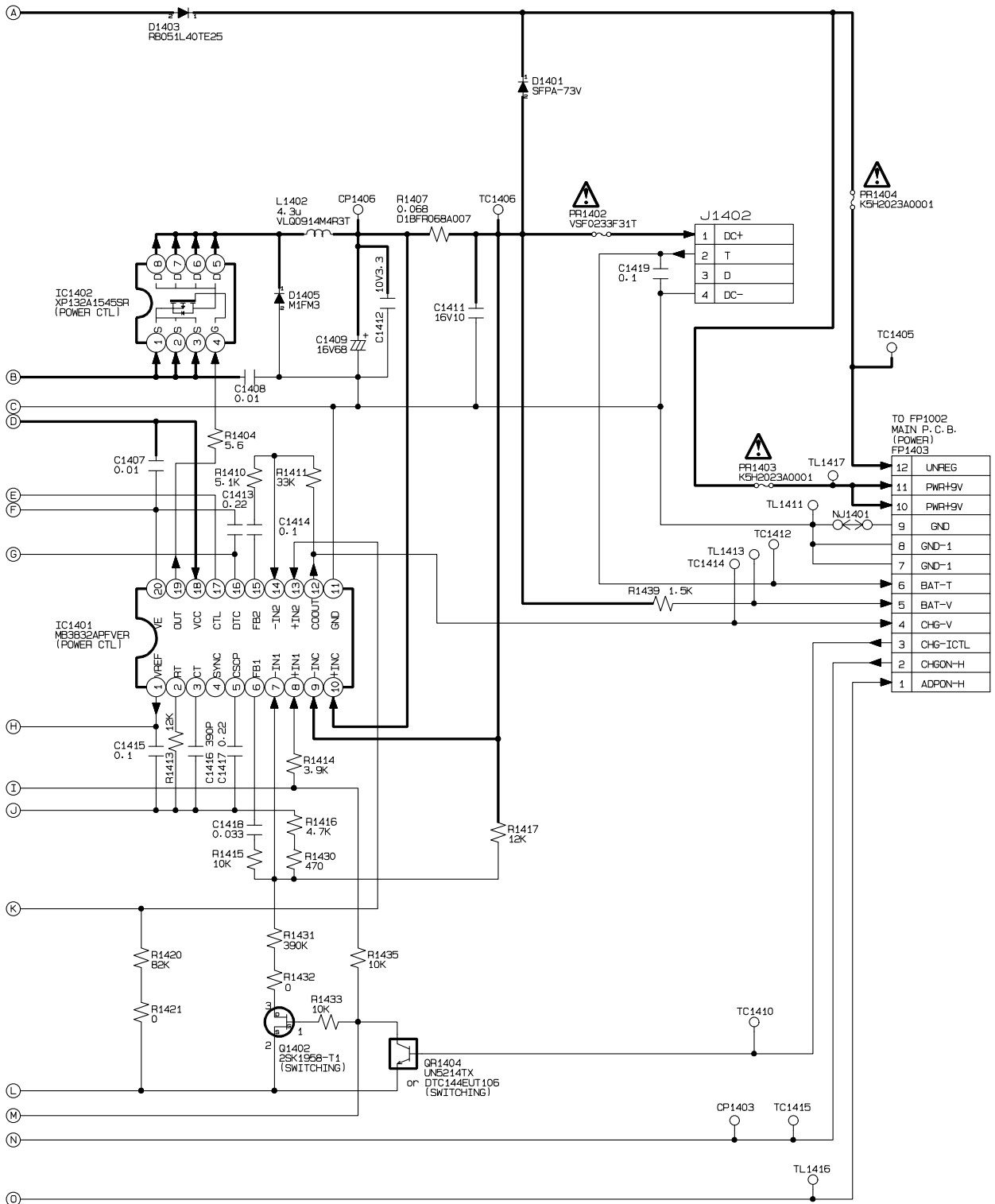


NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING
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IN THE PARTS LIST. AND MAY BE SLIGHTLY DIFFERNT
OR AMENDED SINCE THIS DRAWING WAS PREPARED.

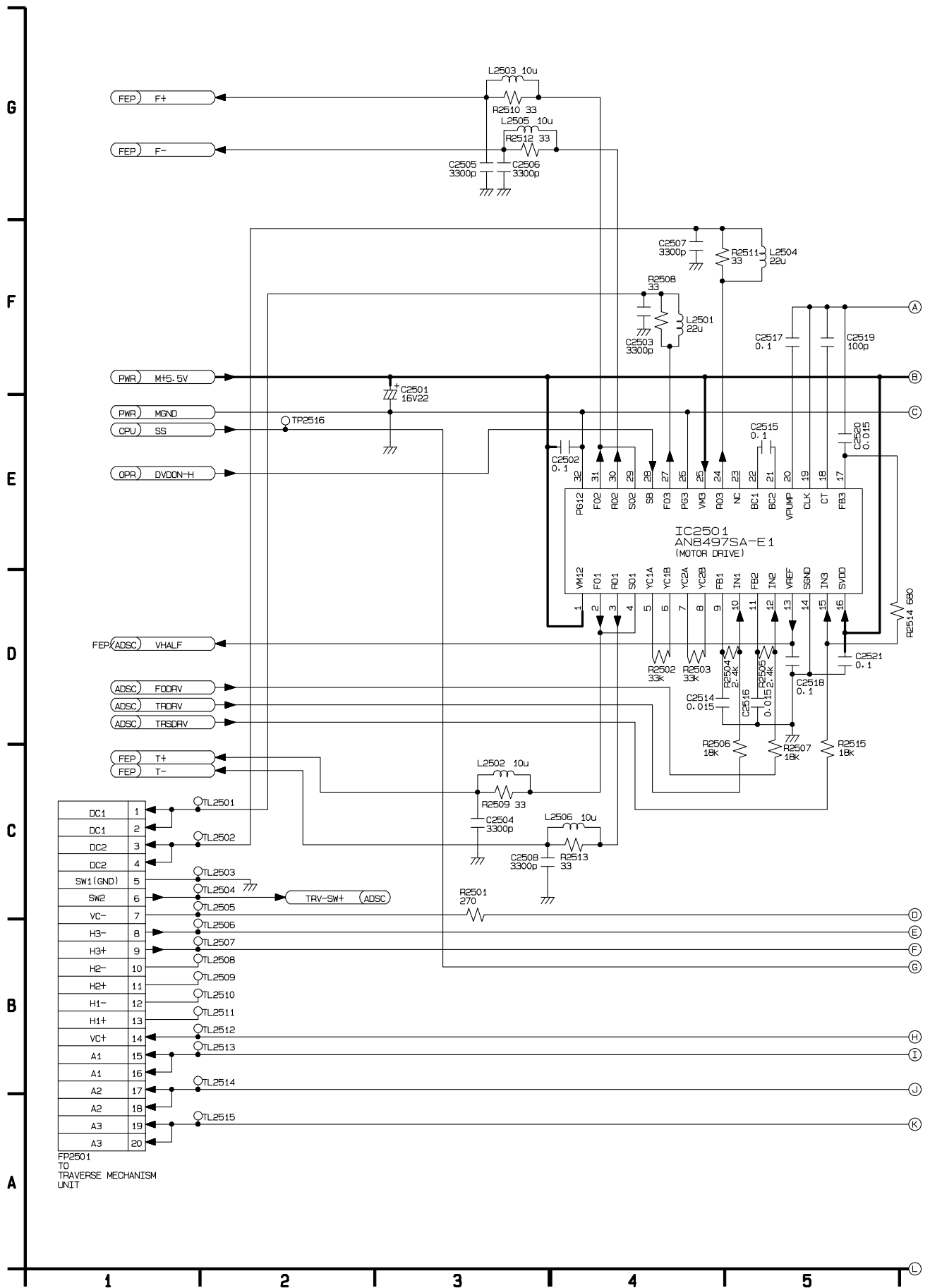








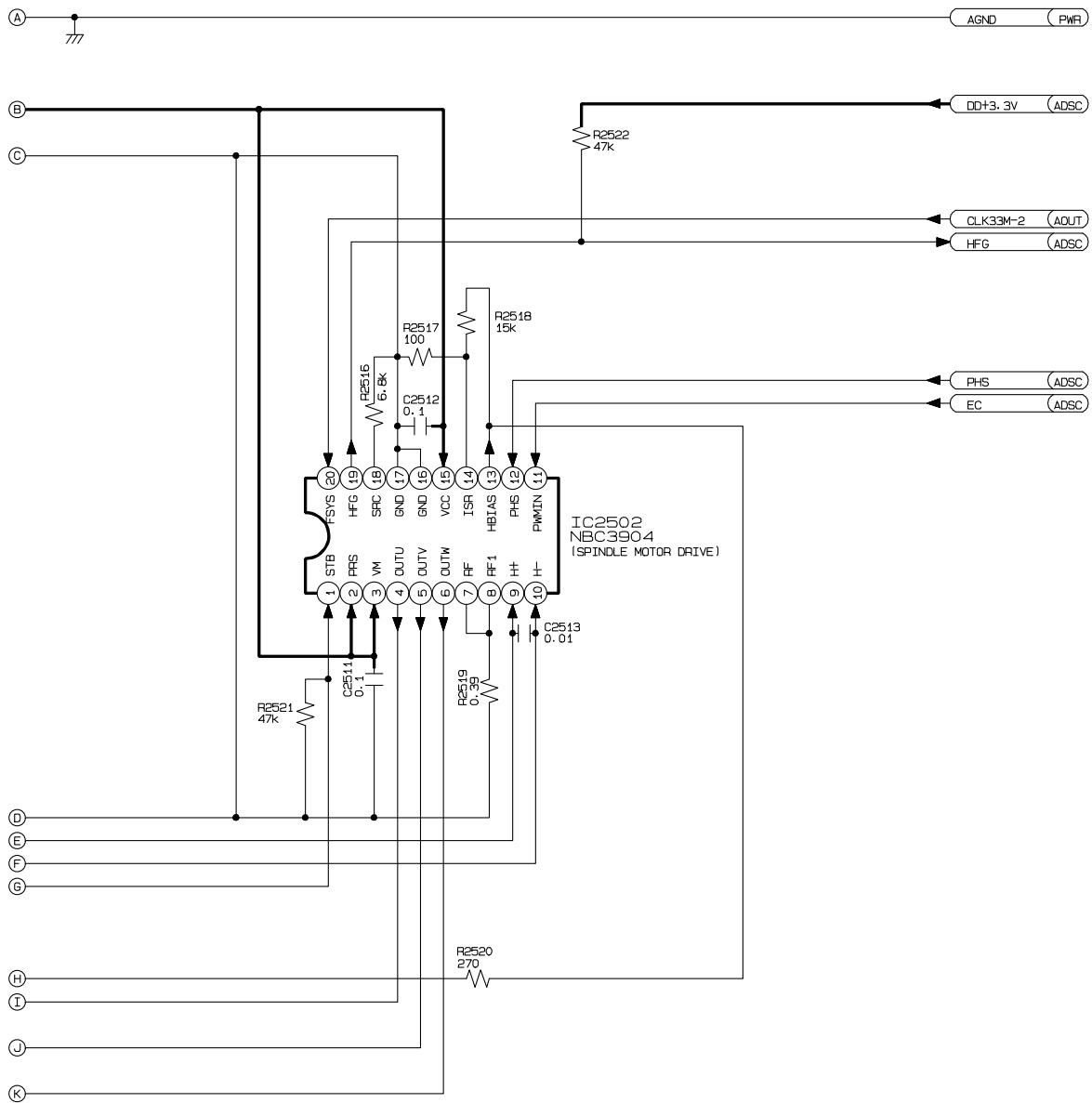
DVD-LV60GK
RECHARGE BATTERY SCHEMATIC DIAGRAM



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SRV SECTION: Page 54
ODC SECTION: Page 60
VOUT SECTION: Page 66

FEP SECTION: Page 56
AVDEC SECTION: Page 62
CPU SECTION: Page 67



DVD-LV60GK SERVO SECTION (MAIN P.C.B. (2/10)) SCHEMATIC DIAGRAM

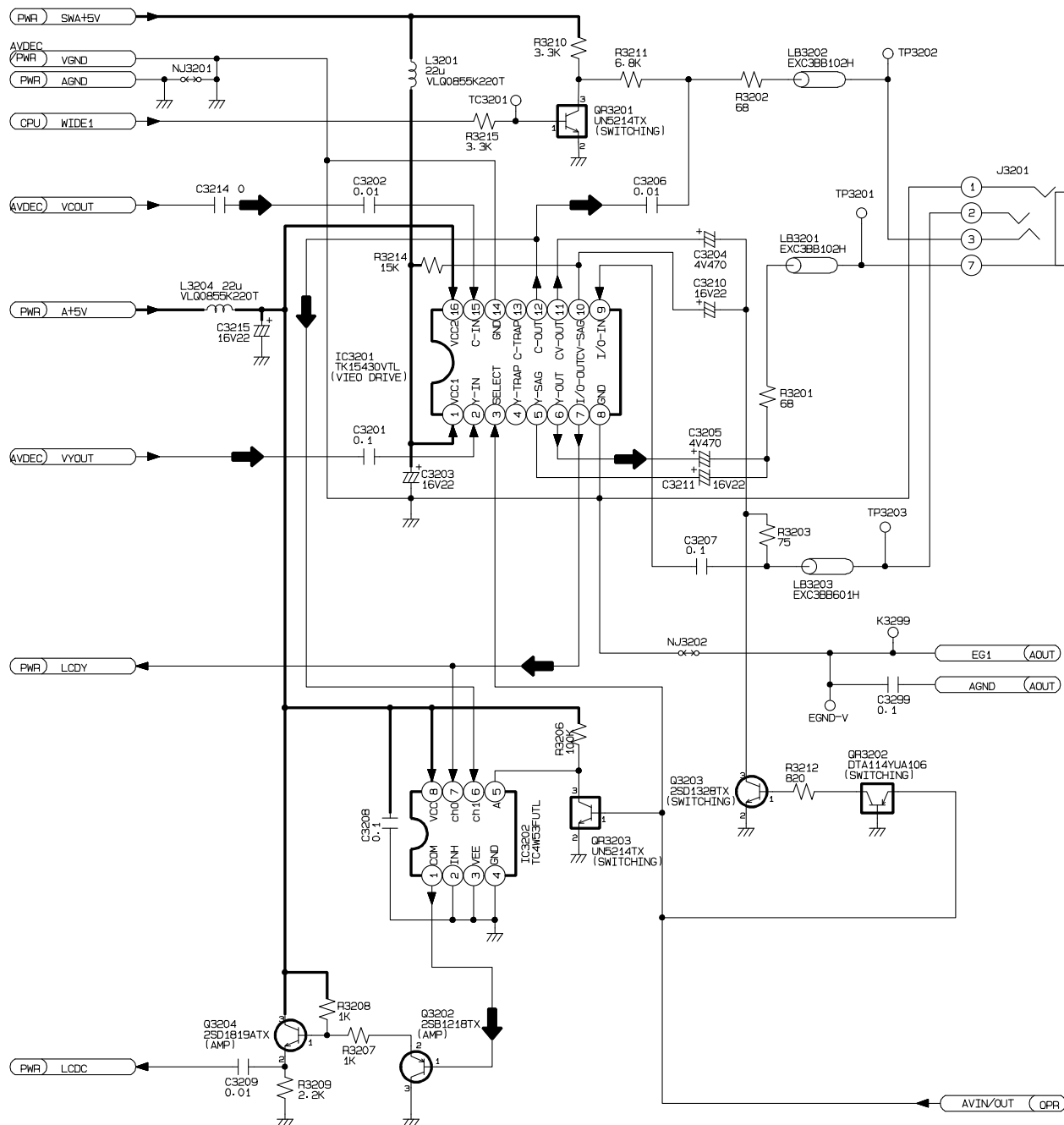
NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

POWER SECTION: Page 52
ADSC SECTION: Page 58
AOUT SECTION: Page 64
OPR SECTION: Page 69

SRV SECTION: Page 54
ODC SECTION: Page 60
VOUT SECTION: Page 66

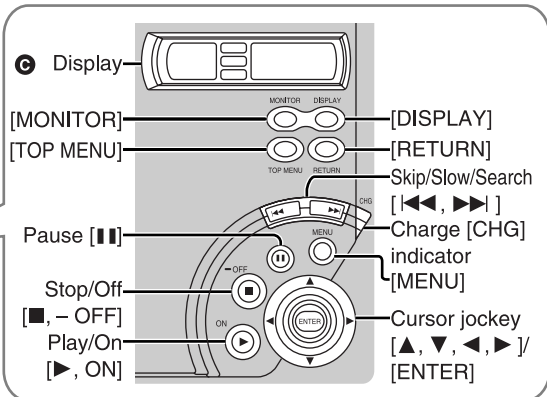
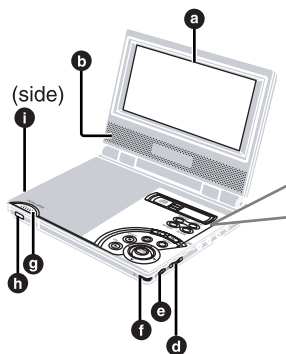
FEP SECTION: Page 56
AVDEC SECTION: Page 62
CPU SECTION: Page 67

← VIDEO SIGNAL



DVD-LV60GK VIDEO OUT SECTION (MAIN P.C.B. (8/10)) SCHEMATIC DIAGRAM

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST* AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

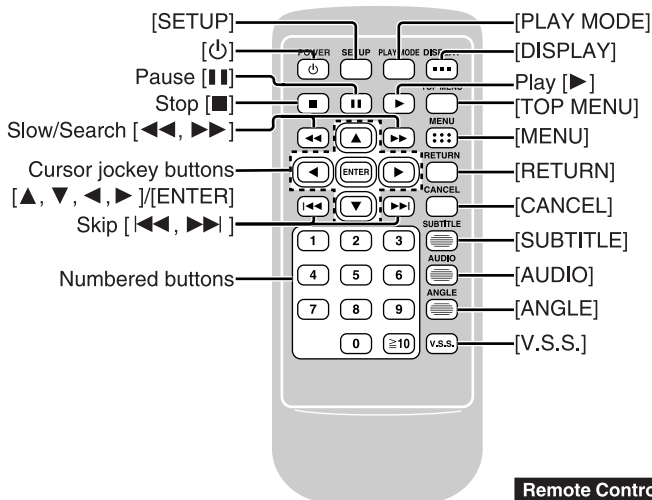


Main Unit

- a** 5.8-inch wide screen LCD
- b** Stereo speakers
- d** Volume [◀ VOL] dial

- e** [HOLD] switch
- f** Standby [⏻] indicator
- g** Disc lid [PUSH OPEN] button

- h** Remote control signal sensor
- i** Headphone [🎧] jack



Remote Control

Using the cursor

On the main unit:

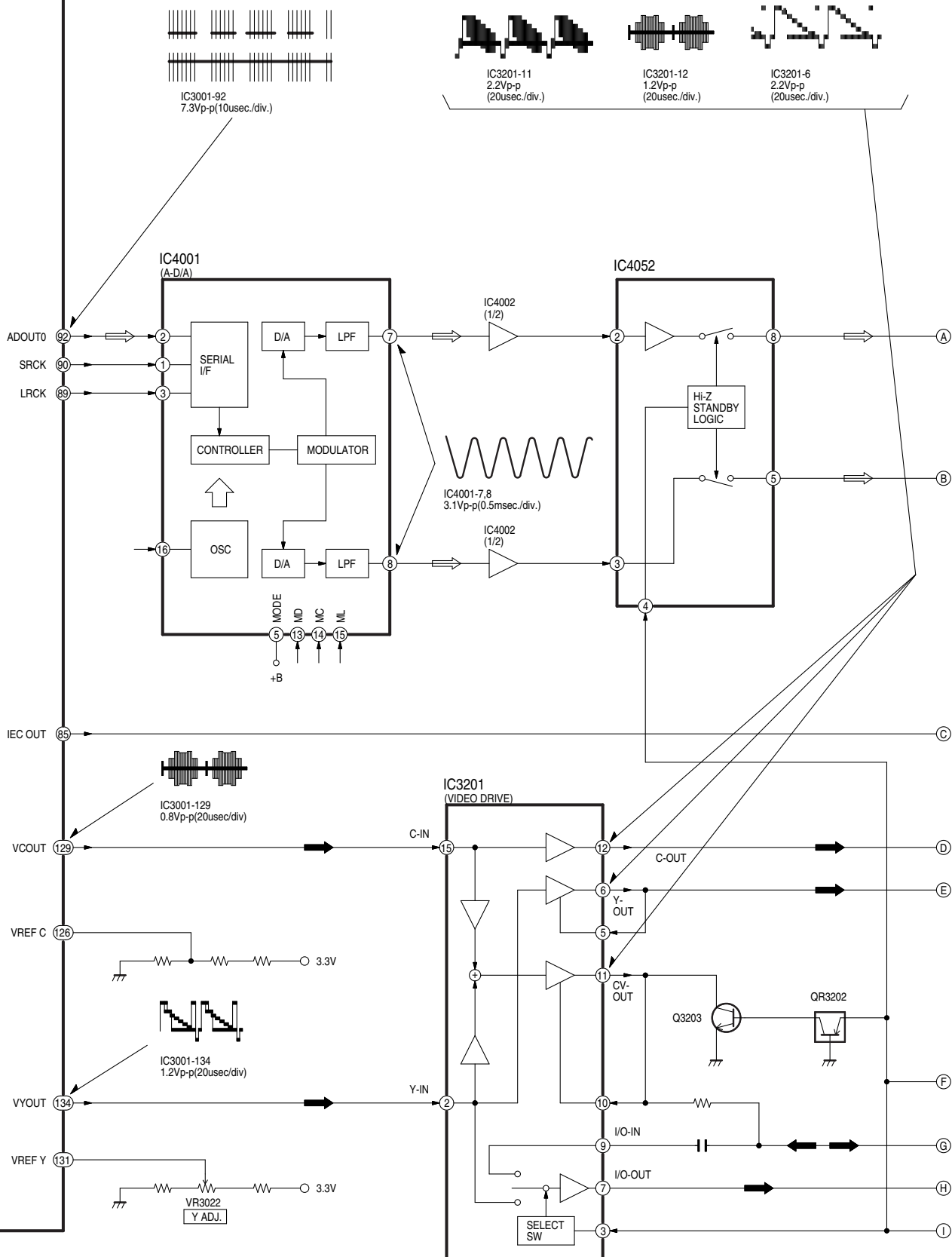
Slide the cursor jockey in the direction you want to move the cursor.

[▲] up, [▼] down, [◀] left, [▶] right.

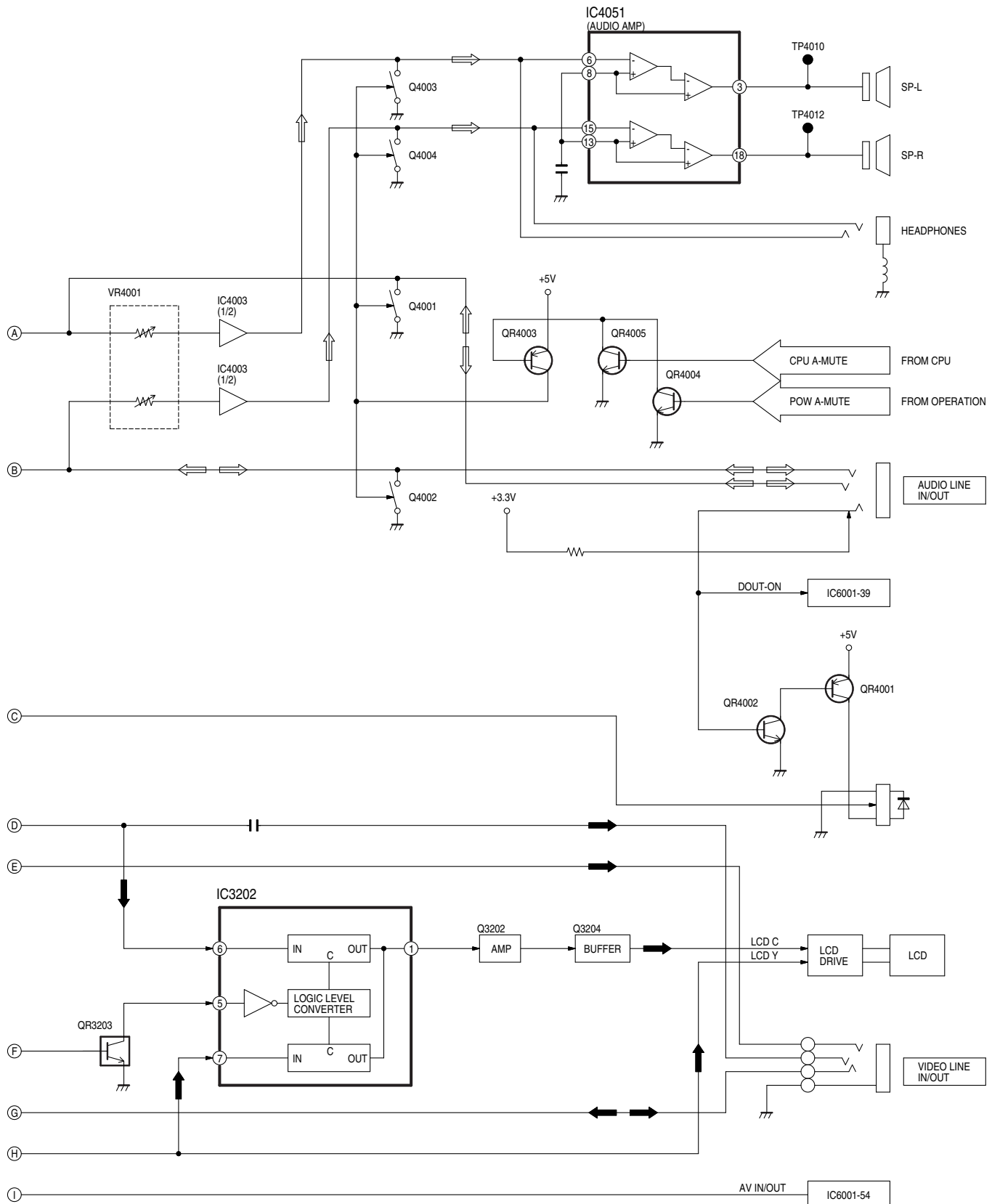
On the remote control:

Press the cursor jockey button corresponding to the direction you want to move the cursor.

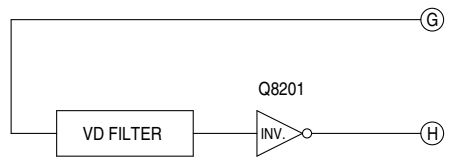
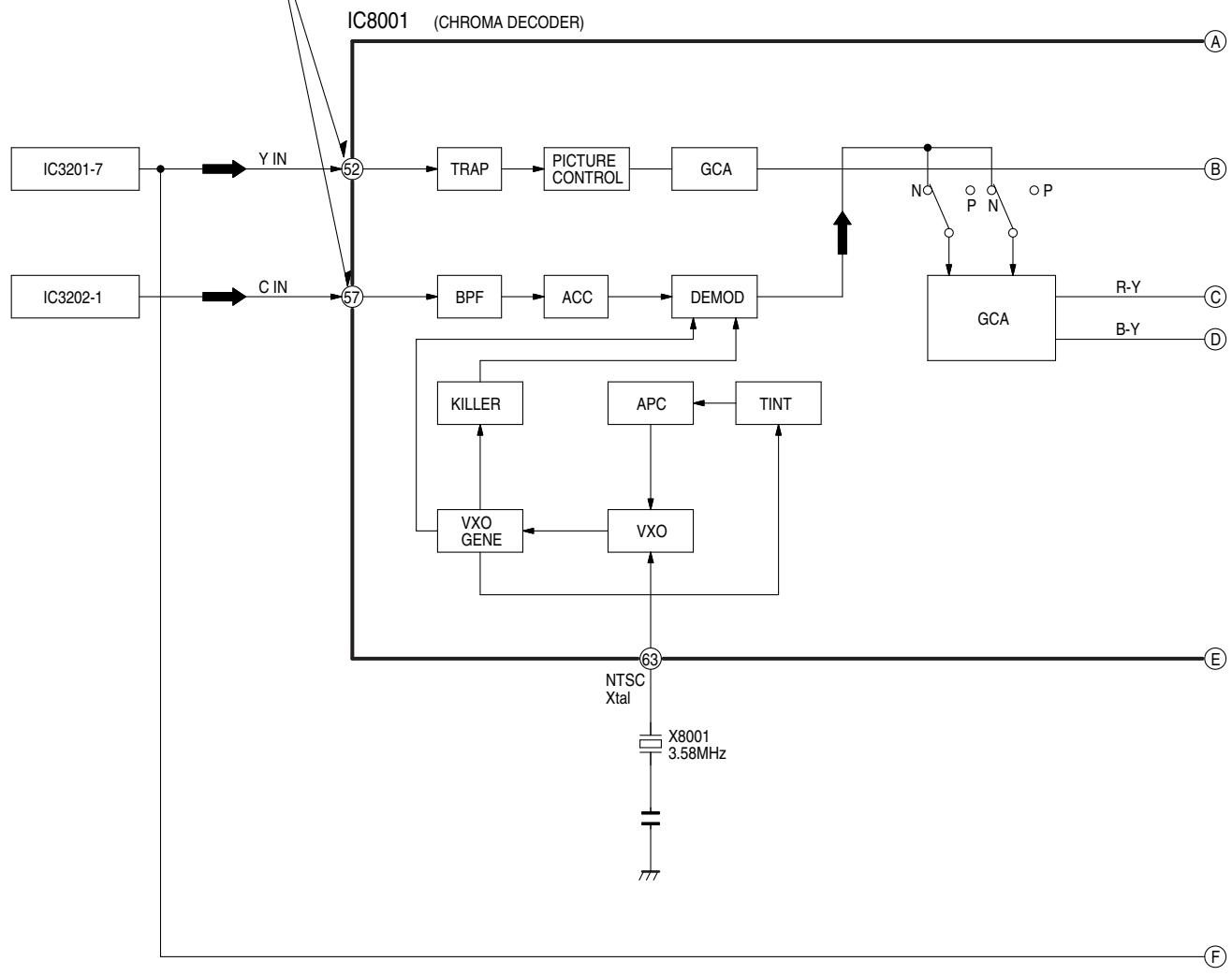
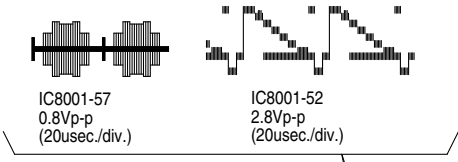
[▲] up, [▼] down, [◀] left, [▶] right.



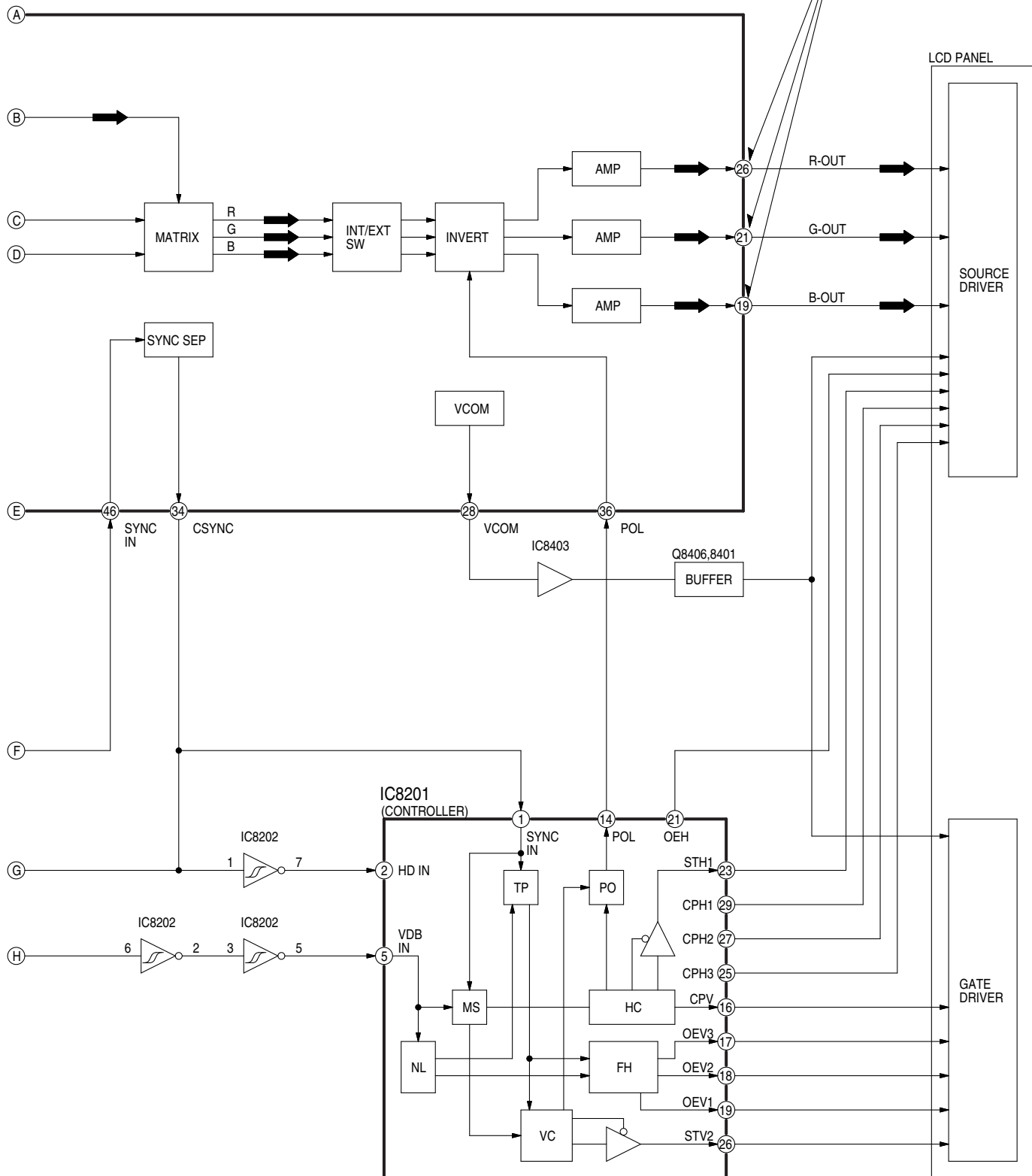
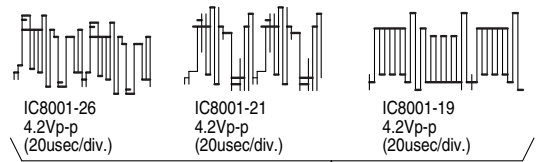
← :VIDEO SIGNAL
 ⇄ :AUDIO SIGNAL



DVD-LV60GK
 AUDIO/VIDEO INPUT/OUTPUT BLOCK DIAGRAM



← :VIDEO SIGNAL



DVD-LV60GK
LCD DRIVE BLOCK DIAGRAM

TRAVERSE
MECHANISM UNIT

MAIN P.C.B.

PICK-UP
UNIT

IC5001
FRONT-END
PROCESSOR
(FEP)

IC2001
DIGITAL
SERVO
CONTROLLER
(DSC)

IC7001
OPTICAL
DISC
CONTROLLER
(ODC)

SPINDLE
MOTOR

IC2502
SPINDLE
MOTOR
DRIVE

STEPPING
MOTOR

IC2501
MOTOR
DRIVE

FOCUS
COIL

TRACKING
COIL

LED

REMOTE
CONTROL

KEY

IC6001
OPERATION
MPU

(A)

(B)

(C)

(D)

(E)

(F)

(G)